Section one

Terms of reference

Planning study

1.1 The terms of reference given to us by the Ministry of Housing and Local Government defined the work programme of the planning side of the project in two stages—

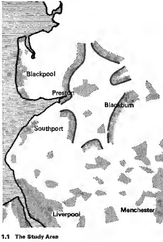
- I within 12 months of the start to advise the Minister on the area to be designated for development under the New Towns Act 1965.
- II after a further 15 months to produce for the Development Corporation (when one is set up) a draft master plan.

Stage I started in January 1966. In accordance with the time-table this report summarises the work done during the first 12 months leading to a recommended boundary for the designated area. The report on Stage II—the master plan—is thus due for submission not later than April 1968. The terms of reference are reproduced in full in Appendix A.

1.2 We were given a study area within a broad band of territory embracing Preston, Leyland, Chorley and several smaller settlements. The limits, shown by the green lines on fig. 1.1, were defined by the agricultural belts on the north and west, the hills and moors on the east, and the Wigan coalfield on the south. Blackburn, Wigan and Garstang were expressly excluded although we were asked to examine the relationship of the study area to the wider region.

1.3 Our brief described the aim of the proposed development as the formation of a growth zone in this part of Lancashire which would improve the social and economic well-being of the whole region, contribute to its industrial revival and the renewal of the older towns, and provide for some of the housing and other development needs of the south east Lancashire conurbation and other congested areas. The provisional size in mind for the development was 150,000 additional to what is there now and growth by natural increase. We were left free to advise on whether this is the right size of population to provide for in this area.

1.4 We were asked to take account of four main criteria which the ultimate master plan would be expected to satisfy, and which would have a bearing on the choice of area to be designated. First the need to integrate new and existing development in such a way as to promote urban renewal where it was required to raise the quality of existing development. The new development should also, of course, create a high standard of environment in itself with a clear contrast between town and countryside. Secondly, building must be possible in reasonably self-contained and complete stages each of which can become socially established in the shortest possible time. It is important to aim at the maximum rate of building and population growth consistent with social integration.



1.1 The Study Area

Scale: 1 inch represents 10 miles.

The green lines show the limits of the study area defined in the terms of reference.

The development must also have a coherent structure which can be easily appreciated by those who live in and visit it, and it must have an appropriate urban character. Thirdly, the communication system must have regard to a high level of car ownership, integrate all forms of public and private transport, and provide maximum segregation of vehicles and pedestrians throughout the main urban areas. Lastly, the use of land must be flexible enough to take account of changing circumstances and ensure the possibility of eventual growth beyond the planned population intake but not necessarily within the designated area. We were specifically enjoined to propose areas for designation which took account of the relative agricultural values of land, existing amenity and landscape values, the presence of workable minerals, site stability and the presence of underground workings.

Methods study

1.5 Parallel with the work on Stage I (Designation) we were asked to make a study of all the processes involved in creating the new town at the very high rate of growth envisaged. In particular this methods study is to make proposals for ensuring an effective transition from planning to building, reducing the gap to the minimum between approval of the master plan and the start of large scale work on the site, and mobilising for this work the widest possible variety of design skills. The aim is to make recommendations that can be tested first in pilot development projects and then implemented at full scale in the main building programme of the town itself.

1.6 This work is touched on further in Section 11. A full report will be presented as part of the draft Master Plan.

Industrial complex study

1.7 The Industrial Research Project mentioned in paragraph 28 of the terms of reference (see Appendix A) has been commissioned by the Department of Economic Affairs. Among other things, its purpose is to find out whether, by introducing particular new industrial activities, it would be possible to complement those already in the area and so help to obtain a more rapid rate of economic growth than would otherwise occur.

1.8 The progress of the study, which is being made by Economic Consultants Limited, is described in Section 10. Its conclusion is timed to synchronise with the completion of the draft master plan.

The next stage

1.9 The purpose of Stage I of the Planning Study is to recommend the land to be designated for the new town. Because of the size and complexity of the project, however, we have found it necessary to examine in broad terms the possible form and structure of the development which this land will contain before being able to draw a convincing boundary. Some of this process of exploration and testing is described in the body of the report which follows. This must not be regarded as a detailed preview of the master plan but rather as a description of the planning strategy which we have developed as a rational basis for designation. The master plan report will contain a much more precise and detailed working out of the physical layout of the new development as well as a programme for its construction and estimates of cost.

Coppull Mill—entrance detail. A late example of the architecture of the Lancashire textile industry at its best

Summary

The study area and its context

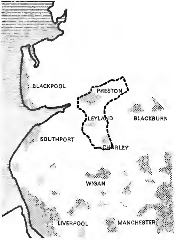
2.1 Part Two of the report following this Introduction first examines in Section 3 the regional context of the project—its geography, communications, physical structure and population. Section 4 goes on to deal with the economic situation in the study area as a basis for industrial growth, and Sections 5, 6 and 7 describe its physical features, existing settlements and patterns of transportation and infrastructure.

Basis for growth

2.2 Part Three examines the conditions which will be necessary for the new town to succeed and concludes that they are present. There is more than enough suitable land within the study area to accommodate the population of the proposed designation area (Section 8) which, assuming a high rate of natural increase, will grow from its present 253,000 to 503,000 by 1991 (Section 9). The area has a sound economic base with considerable potential for the expansion of existing industries. It is excellently placed to attract new industry and it should be possible to ensure that the build-up of jobs keeps pace with the planned population growth (Section 10). So long as a comprehensive sub-regional building programme is organised on the basis of advanced building and management techniques there is no reason why the new town should not be built at the envisaged growth rate (Section 11).

Proposals

2.3 Sections 12 and 13 of Part Four set out strategic concepts for the form of the new city and establish the environmental standards which determine its space needs. This part of the study will be re-examined in depth during Stage II, but the broad pointer which has emerged is that it is preferable to base the development on a linear structure linking the expanded towns with each other and with the new green field developments. We suggest that the community structure should be based on a hierarchy of neighbourhoods (4-5,000 people), districts (15-18,000) and townships (60-80,000) which, we believe, represent viable social and economic units of development. We regard the ultimate planned growth to half a million people as a tremendous advantage because of the major facilities which this size of city can support. These are at present available only in the congested and inaccessible centres of the two conurbations of the N.W. Region. The urban form we have proposed suggests a measure of dispersal of these city scale facilities within an integrated structure of land use and transportation channels planned to give a high level of accessibility for both public and private transport, and to bring character and goodness to every part of the whole.



2.1 Area proposed for designation in relation to the region
For a detailed map see fig. 16.1 page 86.

2.4 We look on the rejuvenation of existing communities as an essential pre-requisite of successful new growth. The designation proposals therefore spring directly from a study, described in Section 14, of how existing and new can be integrated to the advantage of both. The proposition which has emerged is that, in broad terms, half the new population should be accommodated in expansion of the existing settlements south of the Ribble, and the remainder in new townships to the north. Preston maintains its role as the sub-regional centre near the middle of the line of communications which forms the spine of this chain of new and expanded communities.

2.5 The land proposed for designation is shown in outline in fig 2.1. Section 15 describes how this form developed from an examination of all the possible ways in which growth was possible within the established physical restraints. We examined the advantages and disadvantages of three different structures in detail and tested their transportation systems. From the evaluation of these structures against a set of strategic criteria we were able to decide the best option for development. This is dealt with at the end of Section 15.

2.6 The area suggested for designation is approximately 51,460 acres. For various reasons 7,273 acres of this are not suitable for development. The remaining 44,187 acres, divided into the 1991 population of 503,000 gives a gross density of 11.4 persons per acre. Section 16 traces the boundary of the area to be designated and in Section 17 we discuss the implications of the new town for the future planning control of adjoining areas. Section 18 concludes our report.

The silhouette of Preston looking north from the Ribble flood plain. Sessions House and Harris Museum in the centre

part 2

The study area and its context

Section three	The region	page 7
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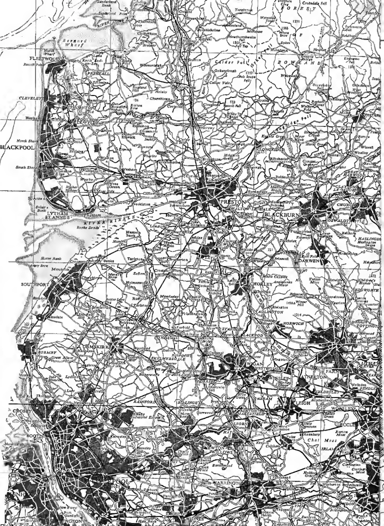
Section six	Existing communities	25
Section seven	Transportation and infrastructure	31


FLEETWOOD
CLEVELEYS
BLACKPOOL
North Shore
South Shore
LYTHAM ST ANNES
RIVER RIBBLE
SOUTHPORT
ORMSKIRK
SKELMERSDALE
UP HOLLAND
RAINFORD
CROSBY
BOOTLE
LIVERPOOL
PRESTON
LEYLAND
CHORLEY
BLACKBURN
DARWEN
OSWALDTWISTLE
CLAYTON-LE-MOORS
GREAT HARWOOD
CHURCH
HASLINGDEN
LONGRIDGE
HORWICH
ADLINGTON
STANDISH
WIGAN
WESTHOUGHTON
ATHERTON
LEIGH
ASHTON-IN-MAKERFIELD
GOLBORNE
NEWTON-LE-WILLOWS
WARRINGTON
WIDNES
ST HELENS
TYLDESLEY
WORSLEY
ECCLES
IRLAM
FARNWORTH
WALKDEN
SWINTON
KEARSLEY
ASPULL
HINDLEY
INCE
ORRELL
BILLINGE
Chat Moss
Calder Fell
BOWLAND
FOREST
Longridge Fell
Parbold Hill
Rivington
Winter Hill
Bernard Wharf
RIVER WYRE
POULTON
KIRKHAM
FRECKLETON
GARSTANG
Horse Bank
Banks
Tarleton
Croston
Rufford
Mawdesley
Burscough
Formby
Maghull
Kirkby Industrial Estate
Haydock
Prescot
Rainhill
Hale Bank
Speke

Section three

The region

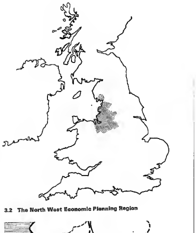
Geography

3.1 The North West economic planning region (figs. 3.2 and 3.3) is made up of the counties of Lancashire and Cheshire together with the High Peak District of north-west Derbyshire. It is bounded by the Lake District mountains, the Pennines, the Irish Sea and the Dee estuary, and is the most densely populated region in the country. Most of its 6½ million people live in the central belt dominated by Manchester and Liverpool and a great deal of the region remains predominantly rural. It contains several areas of great natural beauty.

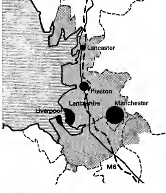
3.2 Some of the region's economic and planning problems were examined in 'The North West, a Regional Study' published by the Department of Economic Affairs in 1965. Within the region there are three main areas of industrial and economic activity containing 75% of the population—Liverpool and Merseyside, the Manchester conurbation and the 'Cotton Belt'. The latter consists of two parts. The first is the inner strip immediately to the north and north-east of Manchester which includes Bolton, Bury, Rochdale and Oldham. The second lies further to the north along the valley system of the River Calder and includes Blackburn, Burnley and Preston. This whole northern part of the cotton belt is defined in the North West Study as the 'Ribble Sub-division', with a population of 760,000. At its western extremity lies the area of study.

3.3 Liverpool-Merseyside has a strong port-based industry supporting, with the other industrial groups, a work force of ¾ million. New industry, particularly motor manufacturing, has been attracted to the area in recent years. Even so employment is not growing as rapidly as the growing population requires and this has led to the designation of this part of the region as a Development Area. The industrial belt along the ship canal joins Merseyside to the Manchester conurbation. This area is strong in engineering and with Liverpool has much of the region's service employment. The growth of jobs and population have been evenly matched and unemployment problems are slight. The Cotton Belt is still the major textile producing area in the region though its work force is declining despite the presence of diversified engineering, now almost as important a source of employment as textiles. The textile decline is slowing down and stabilisation is occurring as the industry is reorganised.

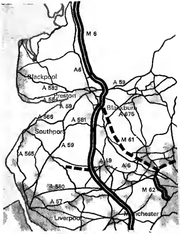
3.1 Central and South Lancashire (left)
Scale: 1 inch represents 4 miles.



3.2 The North West Economic Planning Region

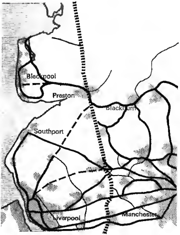


3.3 The North West Economic Planning Region (right)
Preston is shown in relationship to the Manchester and Merseyside conurbations, the main railway line and M6. County Boundaries are indicated.



3.4 Motorways and major roads in Lancashire
M61 is expected to be finished in 1971.

═ Existing Motorways
▬ ▬ ▬ Motorways in M.O.T. programme
— Major Roads



3.5 Railways in Lancashire

┆┆┆┆┆ Possible electrification
— Freight only
— — — Under consideration for closure

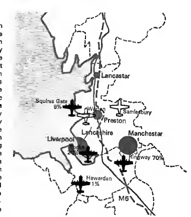
Communications

3.4 The M6 motorway, the national route between England and Scotland, forms the north-south axis of the regional highway network stretching 140 miles from Walsall in the south to Carnforth in the north. The only other motorway at present constructed in the region is the Stretford-Eccles By-pass (M62) forming the western part of the Manchester outer ring road (fig. 3.4). Construction of the proposed M61 Manchester to Preston motorway is planned to begin early in 1967 with the first eight mile section from the Horwich Link to the Chorley Link. The whole 20 miles is due to be operating by 1971 and a traffic flow on this motorway of 36,500 vehicles per day in 1970 has been predicted by the Lancashire County Council. M61 will join M6 at Walton-le-Dale in the north and the Lancashire-Yorkshire motorway (M62) in the south. M62 forms part of the Manchester outer ring road to the west and north of Manchester and the 18 mile length within Lancashire is expected to be finished in 1971. This motorway will form the main road link between the North-West and North-East. Construction of the proposed motorway link between north Liverpool and the M62 and M6 has now started with the first section to serve Skelmersdale New Town. Other Motorways proposed in the Lancashire County's highway plan include the Blackpool link to M6, the Liverpool-Preston motorway, the South Lancashire motorway between Manchester and Liverpool and the Preston Southern By-pass (fig. 7.1). The County Council predict that in 1970 some 38,500, 43,600, 23,200 and 13,700 vehicles per day respectively would be carried by these roads if they were built by then.

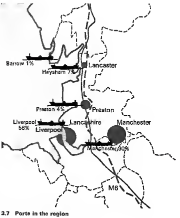
3.5 The main west coast railway line from London to Scotland passes north-south through the region via Crewe, Warrington, Preston and Lancaster (fig. 3.5). This line is at present electrified from London to Manchester and Liverpool, and British Rail are studying the feasibility of extending electrification northwards to Glasgow. The siting of liner train depots near Preston and Warrington is being considered in addition to those planned at Manchester and Liverpool.

3.6 The two major airports serving the region are at Manchester (Ringway) and Liverpool (Speke). Ringway is the country's second major airport and deals with about 1.4 million passengers a year. Traffic at Speke is 0.4 million passengers a year. Neither of them is expected to reach its maximum capacity before the late 1980's and although the question of a new airport for mid-Lancashire has been mooted no site has yet been agreed. Two other minor airports also serve the region at Chester (Hawarden) and Blackpool (Squires Gate) (fig. 3.6).

3.7 The region's two major ports at Liverpool and Manchester are of national importance. Liverpool is the second largest port in Britain and handles about 26 million tons a year. Manchester handles about 13½ million tons a year. Of the smaller ports in the region Preston, Heysham, Fleetwood and Barrow are the most important (fig. 3.7). Although the inland waterways in the region, except for the Manchester Ship Canal, have only small commercial significance, they have considerable potential for recreational use.



3.6 Airports in the region
Commercial airports shown in black.
Total passenger movement in 1964 = 1,800,000.
Percentages handled—Manchester (Ringway) 70%; Liverpool (Speke) 20%; Blackpool (Squires Gate) 9%; Hawarden 1%.



3.7 Ports in the region
Percentages of total trade handled are shown (1964 total tonnage of 46,000,000 equals 100%).

Problems

3.8 The economic, social and environmental problems which the region faces are a legacy of the pioneering role it played in the Industrial Revolution. It has a huge stock of obsolete, derelict and overcrowded buildings of all kinds. Much of the landscape between the towns has been abandoned for years—worn out through the impact of repeated cycles of intensive economic activity followed by slump. The long struggle to defeat the pollution of air, water and land is beginning to show encouraging results but still has far to go. The backlog of declining industry, particularly in textiles and mining, has been tackled heroically but will continue to create social and economic stress as whole communities have to adapt themselves to new ways of living and working.

3.9 Because of the run down environment and overcrowded housing of the older parts of the towns there has been great pressure for development on spare land between and around the two great conurbations. This has increased the already severe difficulties of renewal and rehabilitation in the areas where they are most needed. The whole vicious circle, exacerbated by local birth rates considerably above average, has caused large numbers of people, often naturally the younger and more vigorous, to leave the region altogether. Thanks to the famous energy and enterprise of the people of this part of the country, there are many hopeful signs. Yet all too often, in comparison with the Midlands and the South, the traveller in the North West accumulates an almost unbearable impression of dirt, poverty, neglect and a desperate need of new investment to replace the gigantic ruins of the nineteenth century.

The future

3.10 The North West Regional Study provides a basis on which future plans for the region can be drawn up. It consists of a general survey and analysis of information at present available about the region, an appraisal of its principal characteristics and problems, some suggestions about the ways in which the more urgent needs might be met, and proposals for further research. In considering the future of the region, and in particular the proposition for a New Town in Central Lancashire, the study stated that it should be possible to develop a modern city complex with a total population of about half a million which would provide a counter-balance to the two conurbations further south.

3.11 Table 3.1 shows the pattern of overspill assumed in the study for the region in the period 1964/81. Some of the schemes like Skelmersdale New Town are already agreed and in operation, others like Central Lancashire New Town are under consideration, and others not agreed. The Town Development Act Scheme at Westhoughton, for instance, has been abandoned. It was noted in the study that the figures for the Central Lancashire New Town were based on experience in earlier new towns and on the assumption that large scale building would start in 1972-3. The possibility was mentioned that a better performance might be achieved with new building techniques and that the new town might also take overspill from Merseyside.

Table 3.1 Regional Overspill Schemes
This table has been taken from Table 42 of the North West Regional Study

OVERSPILL SCHEME	Number of households to be accommodated by 1981 from		
	S.E. Lancs	Merseyside	Total
New Towns—			
Runcorn	—	11,000	11,000
Skelmersdale	—	14,000	14,000
Warrington	13,000	—	13,000
Central Lancashire	**15,000**	—	**15,000**
Town Development Act Schemes			
Westhoughton	12,300	—	12,300
Widnes	—	3,730	3,730
Winsford	—	500	500
Crewe Macclesfield	4,800	—	4,800
TOTAL	45,100	29,230	74,330

3.12 The study assumed that the overspill schemes would be occupied at an average rate of 3.5 persons per dwelling so that 52,600 people (15,000 x 3.5) were expected to move to the Central Lancashire New Town by 1981. During the same period our programme described in Section 9 proposes an intake of 64,500 which is 12,000 more. The North West Study however, predicted that by this date, after allowing for overspill, there would still be a deficiency of 45,100 houses (say 157,000 people) in South East Lancashire if voluntary emigration stopped—in other words if no one moved out of South East Lancashire apart from those people occupying overspill schemes. It may be worth pointing out, to reduce confusion, that it is pure coincidence that this figure for housing deficiency is the same as the figure in Table 3.1 for the total number of households from South East Lancashire to be accommodated in overspill schemes. If emigration continues at the average rate for the period 1956-64, the housing deficiency is reduced to 2,700 which is equivalent to 9,500 people. In fact in the latter part of this period, from 1961 to 1964, the rate of emigration has already fallen to a very low figure, and it seems likely that the housing needs of 1981 will approach closely the very high level of the 'no emigration' assumption.

3.13 On the strength of the North West Study figures, therefore, it appears that the total need for new housing for people from South East Lancashire, of the order implied by the rate of population growth which we propose for the New Town, is justified on condition that voluntary emigration continues at a slightly lower rate than the average for the period 1956-64—and we judge this to be a reasonable, and safe, assumption. It is necessary to bear in mind that Merseyside will have a large housing deficiency whatever happens to the rate of voluntary emigration.

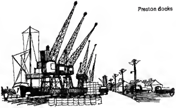
3.14 The North West Economic Planning Council issued a first statement of its views on a strategy for the region early in 1966. This was mainly concerned with the scale and location of new housing and employment needed in the region, although it stated that the Council would be dealing with the whole range of economic and environmental issues. The statement points out that, if there is no net emigration, the population in the region is expected to increase by about one million over the next 15 years (from 6.7 millions to 7.7 millions by 1981), and considers that in calculations of housing and employment needs it should be assumed that outward migration is halted. The Council give several reasons for this view. First they maintain that there is no evidence that the country will be better off if people move from the North-West to other regions, and they point out that continued substantial migration may rob the area of young, able and vigorous people. Secondly, they suggest that plans for future land use are more easily adjusted downwards than upwards, and the implications of a big population increase should be faced while there is still time. They conclude with the hope that the next 15 years will see substantial progress in removing one of the chief causes of migration—the unattractiveness of some of the towns in the North-West.

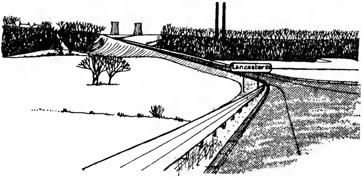
3.15 However, even if outward migration were to continue at the 1956-64 rate, the Council's statement shows that it would still be necessary to accommodate an additional 800,000 people in the region by 1981. Whether the figure is 800,000, or one million, the problems for land use planning are immense. The statement notes the Leyland-Chorley new town proposal in this context, and in addition suggests two more areas of major growth in South Cheshire and North Lancashire which might quickly be made attractive for industrial and office development. It also points out that all areas in the region must make a contribution to the problem to the best of their resources, as it expects the three growth areas mentioned to provide for no more than a third of the likely increase in population. This points clearly to the vital role which the large scale renewal and expansion of existing towns must play in the accommodation of population growth in the region.

3.16 The Council's strategy for the location of population increase aims to keep open the remaining vacant areas between Manchester and Liverpool so that good living conditions can be obtained for people already in that area. It lays stress on the need to avoid the most fertile agricultural land wherever possible and suggests that particular industrial and commercial developments should be encouraged in the area specially suited for them, so that, for instance, industries with high import content or export potential might be drawn to the Lower Mersey, while footloose industries such as light engineering or wholesale distribution might go to the newer growth areas.

Conclusion

3.17 It is evident that the region has severe problems of obsolescence and decay which can only be solved by the planned deployment of investment designed to relieve population pressures in the older centres, and to disperse economic growth more widely. It is also clear that the housing need alone in the next two decades is likely to be so great that it can only be dealt with by a combination of massive new developments and the large scale expansion and renewal of existing towns. It is in this context that we consider in the remainder of this report the particular problems and opportunities of the Central Lancashire project.


Preston docks



Looking north on M6 east of Preston. Courtaulds factory beyond wooded escarpment of the Ribble Valley

The study area—a basis for economic growth

Definition of the study area

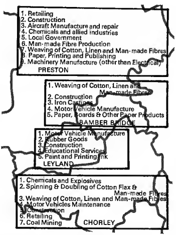
4.1 As we have already mentioned in Section 1 the study area which we were given in our terms of reference lies on the plain between the popular coastal resorts of Southport and Blackpool and the cotton towns of the valleys running east from Preston, the nearest of which is Blackburn (fig. 1.1). Its population is about 290,000, the existing distribution and characteristics of which are discussed in Section 6. It coincides with the Preston and Chorley sub-region quoted in the North-West Regional Study and forms the western part of the Ribble Sub-division referred to in paragraph 3.2.

Contrasts with surrounding areas

4.2 While there is considerable textile manufacturing in and around Preston and Chorley, the area is not tied to this industry in the way that the 'Cotton Belt' proper has been. It has quite a strong base in other manufacturing industries, especially vehicles and mechanical and electrical engineering. By its location on the main north-south communication routes, with good access to places east and west, Preston has become the centre for retail and wholesale distribution and for transport for a large part of Central and Northern Lancashire. It is also the administrative centre for Lancashire County Council. The study area thus has a higher proportion of employment in service industries than the rest of the Ribble Sub-division.

4.3 In contrast, most of the surrounding areas have not fared so well. To the south, Wigan has had to contend with a declining coal industry, while the string of cotton towns running up the Calder valley has been much more strongly textile based, besides being more isolated from main communication lines and in terrain that was rather less attractive to modern industrial development. The coastal resorts to the west have been more prosperous with both seasonal activities and growing residential populations, but they lack a wide range of employment opportunities.

4.4 As a result the study area fared better than most of the surrounding areas both in the inter-war depression and in the post-war period of the last 20 years. It has had relatively low unemployment, some industrial expansion, and has not suffered from emigration in the way that most of the neighbouring areas, except Blackpool, have. Unemployment in the study area has recently been not only much lower than in the surrounding areas but also appreciably lower than the North-West region and the whole of Great Britain. The number of people travelling into the area to work each day is double the number travelling out. A further indicator of the economic health of the study area is the level of private housing construction per thousand of


1. Retailing
2. Construction
3. Aircraft Manufacture and repair
4. Chemicals and allied industries
5. Local Government
6. Man-made Fibre Production
7. Weaving of Cotton, Linen and Man-made Fibres
8. Paper, Printing and Publishing
9. Machinery Manufacture (other than Electrical)
PRESTON
1. Weaving of Cotton, Linen and Man-made Fibres
2. Construction
3. Iron Castings
4. Motor Vehicle Manufacture
5. Paper, Boards & Other Paper Products
BAMBER BRIDGE
1. Motor Vehicle Manufacture
2. Rubber Goods
3. Construction
4. Educational Services
5. Paint and Printing Ink
LEYLAND
1. Chemicals and Explosives
2. Spinning & Doubling of Cotton Flax & Man-made Fibres
3. Weaving of Cotton, Linen and Man-made Fibres
4. Motor Vehicles Maintenance
5. Construction
6. Retailing
7. Coal Mining
CHORLEY

4.1 Main employment groups in the study area
The boundaries of the four employment areas are shown in green. The main types of employment are shown in descending order of magnitude of workforce (in 1965).

population which has recently been two and a quarter times greater than that of the remainder of the Ribble Sub-division.

Employment and industry within the study area

4.5 A wide variety of industry operates within the study area employing a work-force estimated for 1966 at 140,000. We deal in figs. 4.1 to 4.5 with the numbers of employees registered with the Ministry of Labour, which are about 6,000 fewer than this total, and we show them by the four Employment Exchanges of the area. As would be expected of a large urban centre the Preston Exchange area has a higher proportion of service industry employment than the others, but it also has important manufacturing units. The Bamber Bridge area, which includes Walton-le-Dale, has some industry but is chiefly a residential district for those working in Preston. Leyland provides mainly male employment in manufacturing jobs not only for its residents but for people throughout and beyond the study area. It has limited opportunities for female workers other than in the small locally orientated service sector. Chorley has quite a well developed service industry component in accordance with its role as a secondary centre. The main types of employment in each area are shown in fig. 4.1.

4.6 Trends in the four main types of employment for the area are illustrated in fig. 4.2. Since the early 1950's the total number employed has not altered greatly. However the share of the traditional textile industries in the manufacturing sector has continued to fall in recent years, while the share of the engineering group in the widest sense has risen as follows—

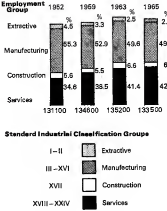
Table 4.1 Registered employment in the study area

Industry Group	Standard Industrial Classification	% of Manufacturing Employment 1959	1965
Engineering etc.	V-IX inclusive	35.8	41.8
Textiles (excluding man-made fibres)	X (excluding M.L.H. 411)	24.0	20.0

4.7 Six large manufacturing concerns provide one-fifth of all employment in the study area and attract many workers each day from the surrounding areas. These are—

Leyland Motors Ltd., Leyland and Chorley
British Aircraft Corporation Ltd., Preston
English Electric Company Ltd., Preston
Courtaulds Limited, Preston
Royal Ordnance Factory, Euxton, Nr. Chorley
United Kingdom Atomic Energy Establishment, Salwick, Nr. Preston.

Their activities cover the manufacture of commercial motor vehicles, aircraft, locomotive equipment, man-made fibres, ordnance supplies and nuclear engineering. These concerns have together been a steady source of employment in recent years, though some are more than usually reliant for their long-term security on Government policy. The remaining manufacturing industry in the area has a widespread sprinkling of activities which are advancing nationally and locally. Particular mention can be made of paper, printing and publishing, and rubber products.



4.2 Registered employment in the study area
The total number employed has not altered significantly since the early 1950's.

4.8 Service industry employment is generally related to the requirements of local population and industry, though Preston in particular provides services for a much wider area. The study area does not have as high a proportion of its employment in service industry as Great Britain, or indeed as the north-west region with its two conurbations. But its rate of increase is rapid and in excess of the region or the country—

Table 4.2 Employment in service industries

Service industries (excluding construction) as a percentage of total employment in 1959 and 1965.

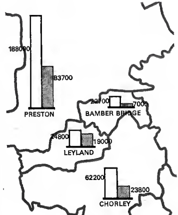
Year	Study Area	N.W. Region	G.B.
1959	37.7	44.3	49.9
1965	42.6	46.3	49.0

A basis for economic growth

4.9 If we look at the whole of north-central Lancashire, that is the Ribble Sub-division with the land to the north-west and south-west of it—holding at present a population of about one million people—we see a range of towns and villages which are certainly not in deep depression, but have been somewhat left behind in the general growth of prosperity of the last 50 years. If this whole area is to be revived and take its place among those which will be in the forefront of progress, we regard it as essential that there shall first be a concentrated effort on a major growth point, where an inter-related group of industries and skills can be built up, and which will provide a centre for commerce, retailing, culture and entertainment to the highest modern standard. If it is successful—and it will call for a large urban grouping—its influence may be expected to spread to the surrounding area. Experience elsewhere has shown that a successful city region with a sound economic base leads by industrial linkage to new activities in surrounding towns.

4.10 If on the other hand a similar total effort were expended in trying to spread the development evenly over all the communities in the area it would probably not succeed in effecting a radical change. Some more branch factories could no doubt be established where workers were available, and new public sector housing would be taken up by those in need of it. But the basic character of the area would not change if it did not have a basis for self-propagating growth, and it would still lag by comparison with other areas. If modern industry did not come people would look elsewhere for jobs and eventually new housing, if built, would not be taken up. In parallel with this if the amenities of the area were not markedly improved it would be difficult to attract to it sufficient people of the highest skills necessary for modern industry, and there would be an insufficient inflow of such establishments if firms found that key people were reluctant to come there.

4.11 There are four main requirements for a major growth centre of the kind envisaged. First it should be large so that it can support central city functions and amenities of a high order. Secondly it should have good accessibility on three levels—with its immediately surrounding area which it will influence, with the rest of the region and its conurbations, and by way of national communication routes with the rest of the country. Thirdly it should have suitable development



4.3 Population and Employment in 1965

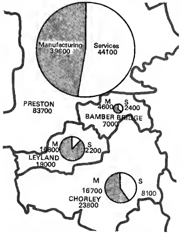
Population is shown by the white column.

The ratio of population to employment shows that Leyland is a large importer of labour.

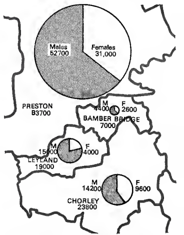
land both for pleasant housing and for the large level sites which modern industry requires. Lastly it should be capable of a rapid tempo of development so that an early breakthrough could be achieved, with jobs, houses and amenities building up in such a way that the promise of improvement could be seen to be realisable in a measurable time. For this purpose it is a great advantage to have a location which is already making some progress, as well as meeting the other requirements.

Conclusion

4.12 Of the whole area under discussion there is one place which meets all these needs and where we think success could be achieved. This is the area of land running roughly from north of Preston to Leyland and Chorley. It has first class local, regional and national communications centred on Preston. It has plenty of firm level sites for modern industry. It already has at its node a sizeable town—Preston—which lends itself to further development for the city functions and amenities of a large new urban complex. It already has a certain proportion of modern industry and its associated skills on which it will be possible to build. Lastly the necessary tempo for 'breakthrough' can be achieved because the housing needs of the North-West region, and especially the people in the South-East Lancashire Conurbation, provide an immediate impetus for rapid residential construction. This last factor will of course only provide an effective base if the growth of jobs in the locality keeps pace with the inflow of population. Our assessment is that the proposed location, with its present industrial base and its potentialities, does make this possible, and that it is the most favourable location in the whole area for achieving expansion of this kind.

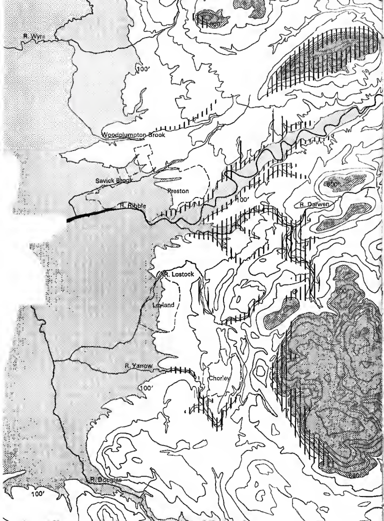


4.5 Work force showing proportion of manufacturing and service industry in 1965
The high proportion of service industry in Preston reflects its role in the sub-region, whereas Leyland has a serious deficiency in service industry.



4.4 Work force showing proportion of males and females in 1965
Leyland provides mainly male employment, and Chorley has a large proportion of female employment.

Preston, Winckley Square—Early 19th Century townhouses


R. Wyre
600'
100'
Woodplumpton Brook
Savick Brook
Preston
R. Ribble
100'
600'
R. Darwen
R. Lostock
Leyland
600'
R. Yarrow
Chorley
100'
R. Douglas
100'
600'

Physical features of the study area

Topography

5.1 The land form of central Lancashire has three dominant features—the Fylde and Ormskirk coastal plains in the west, the gradually rising central plain, and the fells and foothills of the Forest of Bowland in the north-east and the Anglezarke moors in the south-east, with the Ribble Valley running east-west between them (fig. 5.1). The topography of the study area divides into parts which clearly relate to this land form. These are the coastal plain on peat and alluvium below the 100 ft. contour, the central plain on boulder clay between the 100 ft. and 200 ft. contours, the foothill zone east of Leyland and Chorley and north and east of Preston, and the gritstone moorlands over 600 ft.

5.2 The three major rivers in the study area are the Wyre in the north draining the Fylde, the Ribble flowing down from the Pennines and bisecting the central plain with its estuary and escarpments, and the Douglas which drains the Ormskirk plain. The Wyre and the Douglas have broad shallow valleys with localised flooding problems whereas the Ribble Valley has steep escarpments between which the river meanders in its flood plain south-westwards to Preston. Other rivers in the area are the Darwen which flows through a sharply incised valley to join the Ribble at Walton-le-Dale. The Lostock is a tributary of the Douglas flowing through an almost completely flat area to the north and west of Leyland. The Yarrow, south of Chorley, runs through a shallow valley to feed the Douglas. North of the Ribble the Savick Brook flows westwards in a narrow valley through Fulwood to join the Ribble at Freckleton. Further north the Brock flows westwards from the Bowland foothills to join the Wyre.

5.1 Topography (left)
Scale: 1 inch represents 2 miles.
Vertical interval: 100′
Land under 100′ is shown in light green and over 600′ in dark green. Vertical lines indicate slopes greater than 1 in 10 which, with the land over 600′, are not considered suitable for development.

5.3 The western coastal plain is featureless country in which even a slight rise is a landmark. Foothills begin to emerge above the central plain broadly along a north-south line running through the centre of the study area. Anglezarke Moor rises to nearly 1,500 ft. immediately east of Chorley. North of the Ribble the configuration of higher ground is more varied. Longridge Fell (1,150 ft.) an elongated outlier of the Bowland Hills points towards Preston from the north-east. Beacon Fell, another outlier of the Forest of Bowland rises to over 800 ft. due north of Preston, and the hills of the Forest of Bowland rise steeply from about 500 ft. to over 1,400 ft. along the northern and eastern boundary of the study area. Fig. 5.1 shows the disposition of ground steeper than 1 : 10.

The northern slopes of Longridge Fell from the west

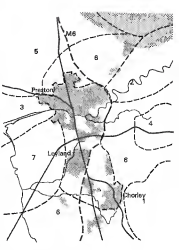
Landscape

5.4 Above the 600 ft. contour the spine of Longridge Fell, and to a lesser degree Beacon Fell, provide a foretaste of the wild natural landscape which appears on the skyline in the north and east of the study area (fig. 5.2). Below the 600 ft. contour, again to the north and east, are areas of high landscape value which include Bleasdale, the valleys running up the north side of Longridge Fell, and the strip of country at the foot of Anglezarke Moors containing the Rivington reservoirs (Area 1 on fig. 5.2).

5.5 The Ribble Valley, running north-eastwards from Preston, in conjunction with the southerly slopes of Longridge Fell (Area 2) constitutes one of the strongest landscape features within the study area. At its northern end above Ribchester its character of parkland and grazing is similar to that of the valleys north of Longridge Fell. Below Ribchester and running almost down to the line of M6 east of Preston it becomes a winding river valley lying between steep wooded escarpments to north and south. This is an area of both good agricultural and outstandingly high landscape value which, in spite of the nearness of Preston, has remained surprisingly rural and remote. To the south-west of Preston, the mud flats of the Ribble estuary and its flat agricultural margins are an established wild life reserve (Area 3). In the sub-regional context the existance of Avenham Park which borders the north bank of the Ribble in the centre of Preston, is of great importance. As a well established park it is directly connected with further open space upstream to Ribchester where the recreational potential has not yet been exploited.

5.6 The rest of the study area lying outside the urban complex of Preston-Leyland-Chorley is mainly rural or sub-rural and of variable landscape value. An area of particular note is the precipitous re-entrant valley above Hoghton Bottoms on the River Darwen immediately west of Blackburn (Area 4). This crescent shaped valley is closed to the south-west by a 500 ft. knoll on which stands Hoghton Tower surrounded by strongly established tree belts. The area around Hoghton Bottoms, well protected from the visual incursions of local industry by Hoghton Tower on its knoll, acts as an important landscape buffer between Preston and Blackburn which lies over the ridge. The area south of Garstang has a pleasant and prosperous rural character. This area contains a section of the Lancaster Canal which is used by pleasure craft, and there are numerous stands of fine trees (Area 5).

5.7 The areas immediately north-east and south of the existing urban complex, though they have many fine views towards the Pennines are a mixture of scattered development and semi-rural landscape (Area 6). The land to the west of Leyland is flat and visually dull (Area 7). Within the urban complex many of the intervening spaces are run down or derelict though there are a few fine parks like Euxton and Cuerden. Within the town of Chorley, Astley Park is a landscape feature of special note and Leyland also has a fine park, Worden, to the south of the town. The wide range of sharp contrasts between exhausted semi-rural landscape, well established town parks, rich agricultural land, bleak moorland, a river valley on the grand scale and the southern margin of the Forest of Bowland which is designated as an area of outstanding natural beauty, all add up to a unique situation of rich variety in an astonishingly small compass.



5.2 Landscape
Light gray indicates land of outstanding natural beauty.

1. High landscape value
2. Outstanding natural feature—Ribble valley
3. Flat land and nature reserve—Ribble estuary
4. Area around Hoghton Tower
5. Pleasant flat countryside
6. Semi-rural landscape
7. Flat land, generally uninteresting

Geology and minerals

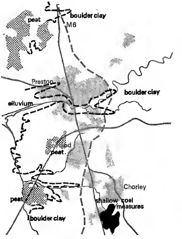
5.8 The solid geology of the study area has two principal components. The southern and eastern parts are carboniferous limestones, grits and coal measures which form the higher land, and the lowlands including Preston and Leyland are based on permotriassic sandstones and marls. The boundary of the two is obscured by glacial deposits which form the foothill zone. The drift geology (fig. 5.3) shows mainly boulder clay with thin ribbons of alluvium along the courses of the smaller rivers and a broad ribbon on the floor of the Ribble Valley and the estuarial mudflats. The high moorlands and the low lying mosses of Farington, Leyland and the Fylde have extensive peat deposits.

5.9 Around Charnock Richard, west of Chorley, there are outcrops of coal. The deep measures of the Wigan coalfield extend to the southern edges of Eccleston, Euxton Park and Whittle-le-Woods, well into the southern half of the study area—and in the east to a small area on the south-west edge of Blackburn. Of the two collieries in the area, both south of Chorley, one closed early in 1966 and the other is expected to close shortly. This will put an end to underground mining in the study area. There are extensive areas of shallow coal measures south of Chorley, the working of some of which is under consideration by the National Coal Board Opencast Executive. Large scale opencast workings can therefore be expected in this area in the future. These are the measures which are referred to in our terms of reference as defining the southern boundary of the study area.

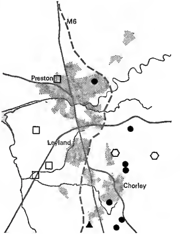
5.10 Deposits of brick clay (fig. 5.4), suitable for the manufacture of common bricks, occur towards the western boundary of the study area. The deposit of Accrington Mudstone at Withnell near Blackburn are rather more valuable as the basic material for Accrington engineering bricks. Deposits of sand and gravel occur at Holme Slack in Preston, and at Brindle, Heapey, Chorley and Adlington in the east of the study area. In view of an overall shortage of sand and gravel in Lancashire, and a rapidly increasing rate of extraction, it is particularly important to safeguard these reserves.

Agriculture

5.11 The National Land Classification system employed by the Ministry of Agriculture, Fisheries and Food, uses five grades to cover all types of agricultural land in terms of their potential for food production—
Grade I: Land with very minor physical limitations to agricultural use.
Grade II: Land with some minor limitations which exclude it from the highest grade.



5.3 Drift geology
Dotted line shows the eastern boundary of alluvium. The alluvium, peat measures and shallow coal deposits restrict development.



5.4 Mineral workings
It is important to safeguard the reserves of sand and gravel.

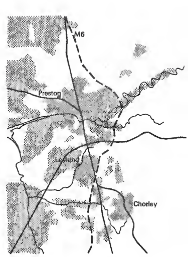
● Sand and gravel workings
□ Brick clay workings
▲ Coal Mining
⬡ Sandstone workings

Grade II-IIIA: A mixed grade grouping because of the patchy distribution of the component grades.
Grade III: Land of average quality, with limitations due to soil, relief or climate, or some combination of these factors which restrict the choice of crops, timing of cultivation, or level of yield.
Grade IV: Land with severe limitations due to adverse soil, relief or climate, or a combination of these.
Grade V: Land of little agricultural value.
Appendix B describes the grading system in more detail.

5.12 Analysis on this basis of the pattern of land quality in the study area shows that south of the Ribble the poorest land (Grades III-V) lies east of Leyland and Chorley, improving to Grades I, II and IIIA, immediately to the west of these towns where the richly fertile Ormskirk Plain begins. Isolated pockets of good land also appear south and immediately to the east of Leyland. North of the Ribble the structure is very similar with land of Grade III and lower to the north-east improving to IIIA and large areas of II in the Fylde to the north and west. A strip of better land (II and IIIA) penetrates the study area east of Preston along the flat alluvial floor of the Ribble Valley toward Ribchester. Fig. 5.5 shows the disposition of land of Grade IIIA and above.

5.13 The existing structure of farming follows closely the pattern of land quality. East of Leyland and Chorley permanent grass of ordinary quality predominates and arable cropping is severely restricted. About 1.8 acres is required for each grazing livestock unit. South-west and north-west of Leyland and Chorley the situation is more mixed where patches of light boulder clay are interspersed with heavier boulder clay. Because of the relatively low elevation, the grassland on the heavier soil is of rather greater value and about 1.65 acres is required per livestock unit. The lighter boulder clay soils support mixed farming and arable cropping which cannot be undertaken to the east of the study area. Yields are rather above average. On the alluvial, peat and sandy soils there is a wider distribution of arable crops and some land is of good quality. Corn yields can approach 2 tons/acre and a certain amount of market gardening is carried on. Immediately to the north-east, north and north-west of Preston is a broad tract of predominently permanent grassland. With increasing elevation to the north-east, the grass becomes poorer in quality. At Woodplumpton for instance (north-west of Preston) only about 1.4 acres per livestock unit is needed whereas nearer Longridge the figure is 1.7 acres. At Singleton, Weeton and Thistleton (areas within the Fylde), by comparison, just under 1.3 acres support each livestock unit. Grazing at such high densities is unusual and demonstrates the above average quality of the land. The considerable areas of Grade II land include grazing of high value and also sustain a wide range of arable farming, including horticultural crops. Fairly extensive areas of peat and alluvium to the west and south-west of Garstang are also highly productive and arable farming predominates.

5.14 Our terms of reference use the agricultural belts to define the northern and western limits of the study area. We have interpreted these limits broadly as the eastern boundaries of the Grade IIIA land where it begins to improve steadily to the west, disregarding relatively small isolated pockets. This kind of line can be taken to be the



5.5 High quality agricultural land
Grey areas show land of Grades I-IIIA in the National Land Classification. This land is above average quality and should as far as possible be retained in agricultural use.

eastern margins, north and south of the Ribble, of two of the most intensively worked and productive market gardening areas in the country, with a high proportion of holdings under 10 acres and an extremely favourable conjunction of soil, climate and accessibility. The use of this land for building development would be an irreplaceable loss, not merely to central Lancashire, but to the whole of the North-West region.

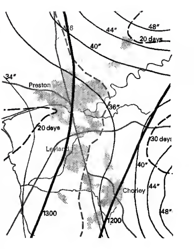
Climate

5.15 Meteorological observations are made at the observatories of Preston Corporation so that we have been able to use statistics local to the study area for comparison with other figures for Squires Gate (Blackpool), Southport and Stonyhurst. The study area has a milder climate than south-east England, with less frost and snow, a smaller variation of temperature over the year, but more rain. The best conditions are on the coast where there is least rainfall (about 32" p.a.), and most sun (about 1,500 hours p.a.). The weather gradually deteriorates towards the Pennines with increasing incidence of rain, snow, fog and frost. On the plain between the coast and the Pennine foothills the study area gets less severe winds than either extremity. Within it, the annual averages to be expected are 35" to 40" rainfall (compared with the national average of 34"), 1,200 to 1,300 hours sunshine (compared with 1,500 hours at the coast and 1,000 in Manchester), up to 30 days of fog (compared with 20 on the coast and over 60 in Manchester), 14 days of snowfall, five days of snow lying (similar to Southport and compared to 16 in Bolton), 90 days with ground frost, and 50-60 days with air frost (fig 5.6).

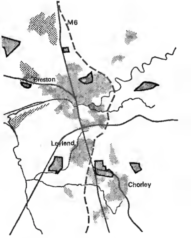
5.16 In the fairly mild conditions of central Lancashire where the annual temperature variation is not great, an overall reduction in temperature due to increasing altitude has a much greater effect in reducing the length of the growing season than in those places where the temperature range is greater. The growing season at Darwen (724 ft. O.D.) for instance is a month shorter than at Southport (37 ft. O.D.).

Ownerships and special influences

5.17 Several large sites in the study area are owned by the Government and most of them are in active use (fig. 5.7). The most significant are Warton airfield on the north bank of the Ribble west of Preston, Samlesbury airfield, part of which is owned by Blackburn Corporation, the Royal Ordnance Factory between Leyland and Chorley, a large site at Ulnes Walton, west of Leyland, part of which may be developed by the Home Office as a prison, and the Springfields works of the United Kingdom Atomic Energy Authority at Salwick, a few miles west of Preston. There are numerous smaller government ownerships such as Cuerden



5.6 Climatic factors (top right)
Annual averages are shown as follows—
Thin solid line—rainfall in inches.
Thick solid line—hours of sunshine.
Broken line—days of fog.



5.7 Land ownership (right)
The black outline indicates Government ownership; the other areas belong to the Duchy of Lancaster.

Hall, Barton Hall, Fulwood Barracks in Preston and part of the oil storage installation at Preston Docks. There is also a group of government office buildings at Penwortham south-west of Preston.

5.18 The Lancashire County Council owns a large area south of Penwortham which is used for County Police Headquarters and the County Agricultural Institute. In Preston two very large buildings are occupied by the administration of the County Council and west of Chorley a former military camp is occupied by the County Fire Brigade. Preston County Borough own a very large site on the north bank of the Ribble at Clifton Marsh, Freckleton, which is used for sewage treatment and refuse disposal. The District Councils also occupy numerous small sites which, outside the urban areas, are mostly sewage works and refuse disposal tips.

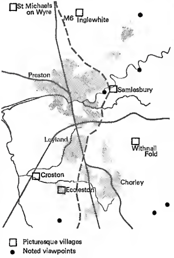
5.19 The Duchy of Lancaster owns a large tract of the Trough of Bowland, and does much to ensure preservation of the countryside in the northern part of the study area. A Duchy estate around Kirkham extends to within about four miles of Preston. The tidal part of the estuary of the Ribble is also owned by the Duchy of Lancaster. North of Preston, another large estate extends as far south as Myerscough. None of this land is subject to powers of compulsory purchase.

5.20 Various other bodies and authorities, mainly concerned with conservation and preservation, own land in and around the study area. They include the National Trust, the Nature Conservancy, the Forestry Commission and the Ministry of Public Building and Works.

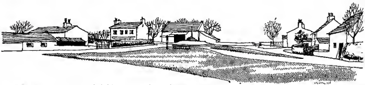
5.21 There are several historic buildings and archaeological remains which deserve mention. They include Hoghton Tower, a mansion on the top of a dramatic hill, Clayton Hall, Stonyhurst College, and Rivington Hall. In addition there are several attractive villages and noted viewpoints over magnificent landscape (fig. 5.8). Ancient routes in the area are the Roman roads from Wigan via Preston to Lancaster, on which Walton-le-Dale was a minor fort, and another from the Fylde coast via Kirkham (a minor fort) and Fulwood to Ribchester. Other Roman roads radiate from Ribchester across the Pennines to Ilkley, to Longridge, across Jeffrey Hill towards Slaidburn, and to Manchester.

Conclusion

5.22 The extent to which the various factors described above are likely to inhibit new development is described in Section B and shown in fig. B.1.



5.8 Heritage



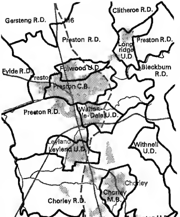
Inglewhite—a farming settlement typical of the country north-east of Preston

Existing communities

Population

8.1 We define the study area for demographic purposes as the County Borough of Preston, the Municipal Borough of Chorley, the Urban Districts of Adlington, Fulwood, Leyland, Longridge, Walton-le-Dale and Withnell and the Rural Districts of Chorley and Preston (fig. 6.1). These had an enumerated population at the 1961 census of just over 283,000, an increase of 3.8% over 1951 compared with 2.5% for the north-west region and 5.6% for Great Britain. These increases show the effects of migration as well as natural increase. According to the Registrar General's estimates the population of the study area had risen to about 294,000 by the middle of 1966. The fact that the rate of natural population increase in the study area and the North-West was below that of the country as a whole between 1951 and 1961 was due to the overshadowing of higher than average birth rates by death rates which were abnormal to an even higher degree. This difference has narrowed in the sixties though death rates remain above average. The age/sex structure of the population is close to the national average. During the 1950's there was positive net migration into the study area to the extent of about 1,500 people. In other words, 1,500 more people moved into the area than left, and this trend speeded up somewhat during the 1960's. This is the opposite to what has happened in the North-West as a whole. Of course net migration figures conceal much larger gross movements. For example, in the year proceding the 1961 census 6,570 people (5.7% of residents) moved within the boundary of Preston County Borough, while 3,800 (3.3%) moved into the town and 5,110 (4.4%) moved out.

6.2 Fig. 6.1 shows the pattern of urban development in the study area and Fig. 6.2 and Table 6.1 the changing distribution of population since 1951. Preston, the largest settlement, with a population of 113,000 at the 1961 census is surrounded by Fulwood (16,000), Walton-le-Dale (19,000) and the most populous part of Preston Rural District at Penwortham (16,000). Together they form an urban area with a population of about 163,000 which has risen only slightly in the past 15 years. Although Preston lost about eight thousand population from 1951 to 1961 the other areas have gained about 12 thousand. This trend appears to be continuing and Preston's population is now approximately 107,400. The population of Chorley has stabilised at about 31,000. In contrast Leyland is an expanding town whose population has risen from about 14,700 in 1951 to over 20,000 today. Fulwood and Walton-le-Dale are also increasing steadily whereas Adlington, Longridge and Withnell have small and fairly static populations. Other small concentrations occur within the Rural Districts at Longton (4,000), Lea (3,750), Ferington (4,500), Coppull (8,600), Croston (2,000),



6.1 Local Authority boundaries
For the Lancashire County boundary see fig. 3.3.

Eccleston (2,250), Euxton (3,250) and Whittle-le-Woods (3,000). The rest of this Section describes briefly the structures of the main urban concentrations in the study area. The communication patterns within and between the towns are dealt with in Section 7.

Table 8.1 Population of the study area by Local Authority
Sources—1951 and 1961 are Census enumerated population figures while 1966 are Registrar General's Mid-Year Estimates of civilian population.

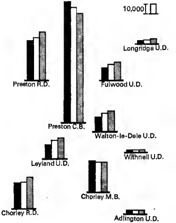
Local Authority	1961	1961	1966
Preston CB	118,300	113,300	107,400
Chorley MB	32,600	31,300	31,200
Adlington UD	4,000	4,300	4,600
Fulwood UD	13,100	16,000	18,300
Leyland UD	14,700	19,400	21,700
Longridge UD	4,300	4,600	6,500
Walton-le-Dale UD	14,700	19,000	23,400
Withnell UD	2,900	2,900	2,800
Chorley RD	27,200	26,600	31,200
Preston RD	39,900	42,600	46,300
Total Study Area	272,700	262,000	294,300

Urban density

6.3 Both Preston and Chorley are compact towns extensively rebuilt and enlarged in the nineteenth century on the base of much older foundations. At the 1961 census the gross town density for Preston County Borough was 17.8 persons per acre. The surrounding communities have considerably lower gross densities. 1961 census figures were 5.1 persons per acre in Fulwood Urban District, 4.0 persons per acre in Walton-le-Dale and 6.6 persons per acre in Penwortham parish. The Borough of Chorley on the other hand has large unbuilt areas within its boundary and the gross density of 7.3 gives a misleading impression of the density of the built-up area. The Leyland figure of 5.1 persons per acre indicates the disproportionately large areas of industry within its boundary.

Preston (fig. 6.3)

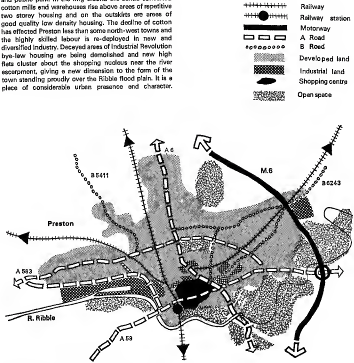
6.4 Preston dates back to before the twelfth century. Its origin and development in the pre-industrial era are closely associated with its strategic position on the Ribble—the first river crossing up stream from the sea giving a direct connection between the fertile and populous coastal plains north and south of the river. Like much of the surrounding part of Lancashire, Preston played a major role in the growth of the great cotton industry of the North-West. The cotton boom was accompanied by a building boom which produced Preston's major civic and institutional buildings and parks, and at the same time large areas of minimum standard workers' housing. A further legacy of the cotton industry was that over the generations both male and female labour became highly skilled and versatile. By the late nineteenth century Preston had



6.2 Distribution of population by Local Authorities
Black indicates 1961 figures; white, 1961 figures; and grey 1966 figures. The decrease in Preston's population has largely been offset by the increase in the adjoining urban areas.

become a large and thriving town. The railway link to Glasgow from the south was complete and the railway had spread up the valleys to the other towns of the northern 'Cotton Belt'. The resorts of the Fylde coast and the Lake District created rail and road traffic which all passed through Preston. (See Section 7 for a fuller treatment of Preston's communications). The town grew peripherally and places like Fulwood and Penwortham were developed as housing areas for professional and managerial families.

6.5 Preston's history is visible in its buildings. In the centre are the imposing Victorian civic buildings, market and public park. In the ring around the centre converted cotton mills and warehouses rise above areas of repetitive two storey housing and on the outskirts are areas of good quality low density housing. The decline of cotton has effected Preston less than some north-west towns and the highly skilled labour is re-deployed in new and diversified industry. Decayed areas of Industrial Revolution bye-law housing are being demolished and new high flats cluster about the shopping nucleus near the river escarpment, giving a new dimension to the form of the town standing proudly over the Ribble flood plain. It is a place of considerable urban presence and character.



6.3 Preston
Two major factors have influenced the growth of Preston. These are its role as a communications centre and its situation above the Ribble flood plain and escarpment to the south.

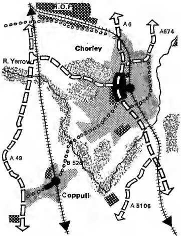
Chorley and Leyland (figs. 6.4 and 6.5)

6.6 Chorley owes much of its present character to its ancient historical function as an agricultural centre. The town today has a compact and coherent structure in a good setting made up of parkland to the west and the Rivington reservoirs and Anglezarke Moors to the east.

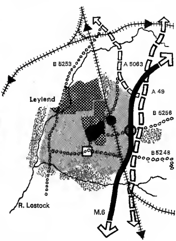
The central area, with a core of nineteenth century buildings and a very fine public park, has a thriving commercial element with a wide range of retail facilities including a popular market. The railway and bus stations are conveniently close to the commercial nucleus but the A6, passing through the centre of the town is severely congested by the mixture of through traffic and traffic destined for the central area. The construction of the M61 motorway link will relieve A6 of through traffic. Section 7 deals with transportation in Chorley in detail. Small areas of bye-law housing exist but in general the gradual redevelopment of outworn areas has maintained a steady improvement in the environmental quality of the Borough. It is a 'warm town'.

6.7 Leyland has greatly increased in size over the last 20 years. The setting of the town on the eastern fringe of the Ormskirk plain is flat and uninteresting. Because of this, and because of its size in relation to the rest of the town, the vast industrial area around Leyland Motors dominates the place. Even the present shopping centre is severely constrained by the nearby industrial buildings.

┼┼┼┼┼┼┼┼	Railway
┼┼●┼┼	Railway Station
▬	Motorway
▭ ▭ ▭	A road
ooooooooo	B road
▒	Developed land
▩	Industrial land
⬬	Shopping Centre
□	Towngate development
▨	Open space



6.4 Chorley and Coppull
Chorley has a compact and coherent structure in a good setting although is bisected at present by A6.



6.5 Leyland
Leyland has grown rapidly due to the presence of major manufacturing industry and lacks coherence.

The development of new public buildings, and additional shopping provision to replace the existing outworn and constricted development, has started at a new site at Towngate about half a mile south of the present centre. New residential estates consisting almost entirely of one and two storey low density housing have been built mainly to the south of the old core and have done little to integrate new and old development or to create a sense of urbanity. The town at present gives an overwhelming impression of formlessness and lack of identity.

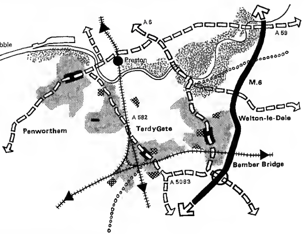
Other parts of the study area

6.8 Fulwood, Walton-le-Dale and Penwortham have no strong centres of their own, and are aligned on major roads—Walton-le-Dale and Fulwood on A6, which remains a busy road although M6 runs parallel to it, and Penwortham on the A59 Liverpool-Preston road (fig. 6.6). Fulwood and Penwortham are pleasant suburban areas of no outstanding character or form. Walton-le-Dale has a greater diversity of character. Higher Walton, for instance, is a compact nineteenth century village dominated by an imposing mill and forming a coherent human-scale environment. Also within Walton-le-Dale Urban District is a characterless new area of housing at Gregson Lane. Bamber Bridge is little more than a ribbon of mixed development along the A.6. The adjoining Tardy Gate-Lostock Hall district is fragmented by railway lines and dominated by a large gas producing plant. The whole area immediately south of Preston gives the impression of non-descript housing development in which large scale renewal has been and is still being prejudiced by infilling. It presents the most difficult environmental and renewal problems of any of the urban concentrations in the study area.

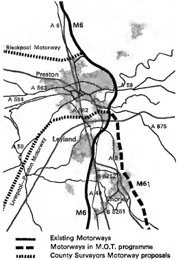
6.9 In addition to the suburban areas there are various sporadic pre-war housing developments in the countryside around Preston. They occur at Broughton, around Lea, Cottam, Woodplumpton, Grimsargh, and along the main roads. Further south they occur at Leyland, where the sprawl is now engulfed in the rapidly growing urban fabric, at Farington, and along various roads west of Leyland.

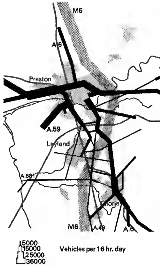
Conclusion

6.10 Preston, both by its size and location, plays a dominant role in the study area. Chorley, well sited at the southern end of the area, is a pleasant bustling historic town, whilst Leyland, the third largest settlement, is growing faster than the other two but lacks their more distinguished character and form. A crescent of populous but less well defined urban developments are grouped around Preston south of the Ribble. As in the case of most of the towns of the North-West a great deal needs to be done in the way of renewal and reconstruction of the urban fabric, and its transportation network, before acceptable modern environmental standards can be achieved.



6.6 Penwortham, Walton-le-Dale and Bamber Bridge
These settlements have a diversity of character, but the area is prejudiced by the concentration of communication lines, dispersed industrial sites and sporadic development.





7.1 Existing and proposed highways
M61 will take through traffic away from A6 and relieve congestion in the centre of Chorley. The County Surveyor's proposed motorway link to Blackpool from M6 will help to relieve congestion within Preston. Railways are shown in green.

7.2 Major road traffic movements
M6 traffic is shown in grey. Roads in the Leyland area are lightly loaded.

Transportation and infrastructure

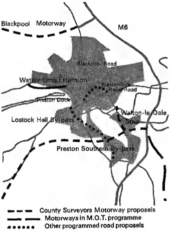
Roads

7.1 At present the only motorway within the study area is M6 running north-south with interchanges at Broughton, Walton-le-Dale, Bamber Bridge and Leyland. M61 is planned to connect to M6 at Walton-le-Dale and to M62, the Lancashire-Yorkshire motorway, at Manchester. An interchange is planned with the new Wheelton By-pass (A674) and A6 just north of Chorley. It is proposed that the new M6-M61 interchange should connect to the Preston Southern By-pass, which will itself be linked to the Liverpool-Preston motorway and proposed Walton-le-Dale spur. The proposed Blackpool motorway is planned to join the M6 at the Broughton interchange north of Preston. M61 is the only one of these motorways in the Ministry of Transport's current programme (figs. 7.1 and 7.3).

7.2 The classified roads in the study area at present carry a large proportion of the national and regional traffic in addition to the local traffic within and between towns. Only two sections of classified road are at present programmed for improvement to dual carriageways—the A674 Wheelton By-pass and the A582 Lostock Hall By-pass. It is, however, planned to improve sections of the A59 Liverpool to Preston and Clitheroe, A677 Preston to Blackburn, A675 Preston to Bolton and A583 Preston to Blackpool, to dual carriageway standard. To the west of Preston the Watery Lane Diversion provides a dual carriageway from the docks to the A583 Blackpool road. Although not planned for comprehensive improvement the A6 Lancaster to Preston, Chorley and Manchester, A49 Preston to Wigan, A581 Chorley to Rufford, A673 Chorley to Bolton, and A6106 Chorley to Wigan, complete the important links in the highway network. M6 has relieved A49 south of Preston and A6 north of Preston of traffic where they run parallel, and it is expected that A6 south of Walton-le-Dale will be similarly relieved when M61 is finished. Northwards towards Garstang and north-eastwards towards Longridge no other major routes exist nor are any at present proposed.

7.3 Preston is at the junction of five major routes—A6 north, A59 east, A6 south, A59 south-west and A583 west (fig. 6.3). The most important current project within Preston is the Inner Ring Road the first section of which started construction in November 1966. The Blackpool road (A5085) which links A583 in the west to A59 in the east is to be converted to dual carriageway by 1973. Blackpool holiday traffic greatly accentuates the traffic problems in Preston (fig. 7.2).

7.4 Chorley straddles A6 about eight miles south of Preston (fig. 8.4). Two other major roads radiate from the town centre—westwards A581 to Rufford and Southport,



7.3 Highway proposals in the Preston area and north-eastwards A674 to Blackburn. South of Chorley A6 joins A5106 to Wigan and A673 to Bolton. B5251 to Coppull carries a large volume of traffic as it is the shortest route to M6 from the Chorley area. The traffic problem caused by A6 passing through the centre of Chorley will be greatly relieved when M61 is built (fig. 7.2).

7.5 Leyland is directly connected to M6 and A49 on its east side (fig. 6.5). A traffic problem occurs during the peak exodus from the industrial area containing Leyland Motors to the north of the town centre. Leyland does not suffer from the through traffic problems of Preston and Chorley and no major roadworks are at present proposed in the district (fig. 7.2).

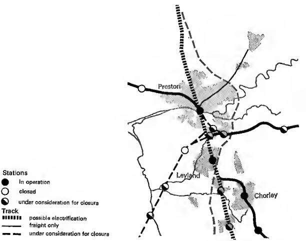
Railways

7.6 The Beeching Report has affected a number of lines and stations in the study area (fig. 7.4). Services have been withdrawn from the Chorley to Feniscowles (Blackburn) line and it will be severed when M61 is built. The Preston to Southport line is closed and the track has been taken up. The Chorley to Wigan and the Preston to Ormskirk lines are under consideration for closure. It is also intended to close the Todd Lane junction link from Preston to the Blackburn line and divert services on to the main north-south line.

7.7 The main lines serving the study area are the north-south Glasgow-London line through Preston, the Blackpool, Preston, Bolton and Manchester line, and the Preston-Blackburn line. On all these lines some of the small suburban stations are closed or under consideration for closure. Plans are afoot for the modernisation of Preston railway station and the electrification of the main line to Glasgow. Preston is well served by trains to Blackpool, Manchester, Glasgow, London and the south and also has local stopping services. Leyland is served both by the main north-south line and the Blackpool, Preston, Bolton and Manchester line. Leyland station is to the north of the town and has extensive goods sidings. Chorley is served by the Preston to Manchester line which is used to a considerable extent for commuting to Preston, Leyland and Manchester (fig. 7.5).

Bus transport

7.8 The major bus operators in the study area are Preston Corporation Transport Department, Ribble Motor Services Limited, Fishwick Motor Services and Bamber Bridge Motor Services. Preston Town Centre is well linked to the



7.4 Existing railway lines
Based on information available at January 1967.
Electrification of the main north-south line will improve the existing fast inter-city services. The broken green line is M6.

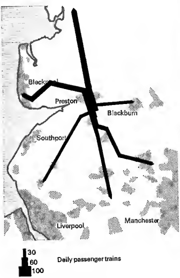
surrounding towns by regular services augmented by local services within the borough and the suburbs to the south (fig. 7.6). The road layout and the concentration of residential and industrial areas south of Preston is such that the great majority of bus routes entering Preston use Penwortham Bridge and Fishergate Hill. A new bus station is planned for Preston at Spring Gardens giving access to the shops at the east end of the town centre and the market. Chorley is served by a variety of bus routes linking it to Preston, Leyland, Blackburn, Wigan and Bolton. It has a newly built bus station very conveniently located in the town centre. A number of services from Preston terminate at Leyland and at peak hours additional buses are provided to cater for work journey traffic from the industrial area.

Air transport

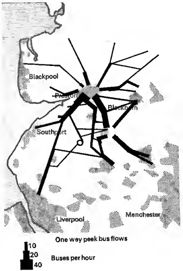
7.9 There are two airfields within the study area at Warton on the north bank of the Ribble west of Preston, and Samlesbury on the south bank of the Ribble between Blackburn and Preston (fig. 3.6). Both are used by the British Aircraft Corporation and English Electric for testing purposes. Discussions have recently been held on the use of Samlesbury as a local civil airport handling domestic and short-haul flights. Warton is leased by the British Aircraft Corporation from the Ministry of Aviation and is unlikely to be available as a civil airport in the near future. It has an 8,000 ft. runway and specialised navigation aids.

Waterways

7.10 Preston docks on the River Ribble handle mainly goods traffic, a large proportion of which is with Ireland. Although the size of vessel that can be accommodated is limited to a draught of 21ft., the quantity of goods handled has recently been increasing at a rate of 7% per annum to a figure of over two million tons in 1965. It now accounts for about 4% of the total tonnage of all the ports in the region and in 1965 40% of its traffic was in containers (fig. 3.7). The docks have a rail connection to the main line at Preston Station and are adjacent to the Watery Lane Diversion which will provide direct access to A583 and A59. Two canals pass through the study area—the Leeds and Liverpool and the Lancaster Canal. Part of the latter is filled in within Preston and neither has any commercial significance.



7.5 Daily passenger train services



7.6 Bus traffic flows

The present concentration of bus services between Preston and the areas to the south is noticeable.

Water supply

7.11 Four water boards cover the study area (fig. 7.7). The principal one is the Preston and District Water Board which takes its supply mainly from the Bowland gathering grounds to the north-east. The Fylde Water Board serves the area north of Preston crossed by the Hodder aqueduct. To the south Liverpool Corporation supplies Chorley Municipal Borough from the Rivington reservoirs. Chorley Rural District takes its supplies from Manchester's Thirlmere aqueduct which passes through the east of the study area.

Sewage disposal

7.12 There are six major sewage authorities in the area (fig. 7.8) whose principal sewage disposal works are—

1. Preston County Borough works at Clifton Marsh, Freckleton.
2. Penwortham works of Preston Rural District.
3. Walton-le-Dale Urban District works.
4. Leyland Urban District works.
5. Chorley Rural District works at Croston.
6. Chorley Municipal Borough works at Common Bank.

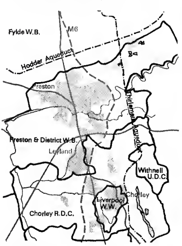
Of these the Clifton Marsh works which discharges its effluent directly into the Ribble Estuary is by far the largest. The rivers south of the Ribble are badly polluted by industrial and sewage effluent. Drainage throughout the study area is generally on the combined system.

Storm water drainage

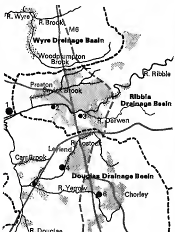
7.13 The principal river basins draining the study area are the Ribble, Douglas and Wyre (fig. 7.8). The Yarrow and the Lostock are small tributaries of the Douglas and prone to flooding, particularly at their confluence at Croston where the rivers are tide-locked. Most of the area to the west of Leyland and Chorley is low lying and the rivers are embanked. The Wyre with its tributary the Brock present similar problems of low lying tide-locked land north of the Ribble. The Savick Brook system, discharging into the Ribble, is overloaded with storm water run-off from the built-up areas of north Preston.

Refuse disposal

7.14 There are a number of tips throughout the area. The largest is the Preston County Borough tip at Clifton



7.7 Water Boards and major aqueducts
The principal water board in the study area is Preston and District. The Thirlemore aqueduct from the Lake District to Manchester also supplies Chorley R.D.



7.8 Drainage basins and sewage works
Land liable to flood is shaded grey.
The sewage works are:—
1. Preston C.B. works at Clifton Marsh, Freckleton.
2. Preston R.D.C. works at Penwortham.
3. Walton-le-Dale U.D. works.
4. Leyland U.D. works.
5. Chorley R.D. works at Croston.
6. Chorley M.B. works at Common Bank.

Marsh where a method combining the disposal of refuse and sewage sludge has been developed. There is a site of approximately 600 acres available of which four acres a year are being covered at present.

Electricity, gas and oil

7.15 Central Lancashire is a power importing area. There is a 183 MW power station at Penwortham but its output is planned to decline after 1970. A number of transmission lines converge on the study area for the crossing of the Ribble (fig. 7.9). One line runs to the south-west of Longridge. The distributing authority is the North Western Electricity Board and the lines illustrated are those of the Central Electricity Generating Board. The Board recently decided to develop a site at Heysham for a nuclear power station but is still interested in a site at Much Hoole, on the opposite bank of the Ribble from Freckleton, for possible future nuclear power development.

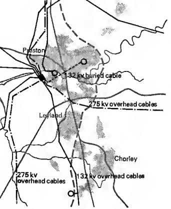
7.16 Gas is produced near Tardy Gate and is distributed through the regional network (fig. 7.10), to storage at Preston, Leyland and Chorley. The distributing authority is the North Western Gas Board which provides linkages to the methane grid and the trans-Pennine pipeline.

7.17 The nearest oil refineries are at Heysham and Mersey-side. Two pipelines are being constructed across the study area (fig. 7.10)—a crude oil pipeline from Stanlow to Heysham (Shell-Mex and B.P.), and an ethylene pipeline from Stanlow to Tees-side. Most of the major companies have depots at Preston docks and all other distribution is from there mainly by road.

Telecommunications

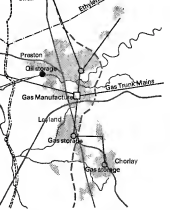
7.18 Preston, Wigan, Blackburn and Southport are telephone trunk switching stations. Leyland and Bamber Bridge are on STD, as Chorley will be when current extensions are complete. There is enough spare capacity at Leyland to serve a population of 40,000 and the Chorley extensions will provide similar spare capacity. The area is covered by the South Lancashire Radiophone Service and Telex is available.

7.10 Television and sound radio reception is good throughout the study area. There is a transmitter at Winter Hill for ITV and BBC 1 and 2.

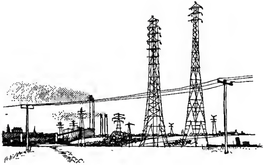


7.9 Central Electricity Generating Board distribution network

A new nuclear power station is planned at Heysham and it is possible that a future nuclear station may be developed at Much Hoole on the south bank of the Ribble, near where it is joined by the Douglas.



7.10 Gas mains, oil and ethylene pipelines



Preston—looking eastwards towards the town centre from the flat lands of the Ribble Estuary—Harris Museum and Sessions House on the left skyline

part 3

Basis for growth

Section eight Development potential page 39
Section nine Population growth 43
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Section eleven Building resources 49

Longridge from the north-west

Development potential

Physical Potential

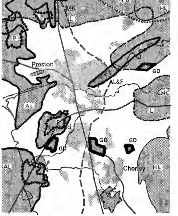
8.1 The physical checks on development in the study area follow directly from the situation which we described in Section 5. They are summarised graphically in fig. 8.1. The white areas on this map represent land with the maximum freedom from physical limitations and therefore the maximum potential for development in this respect. The grey areas show various degrees of potential varying according to the severity of the restraint and the extent to which a particular piece of land is subject to more than one restriction. It is clear that this kind of overlapping occurs less in the east of the study area than the west where superimposition for instance of high agricultural quality, peat, Duchy of Lancaster and Government ownerships, and liability to flooding make development in some areas a very unattractive proposition. To the east on the other hand there are large areas of land over 600 ft. above sea level which, although not necessarily coincident with any other restraint, constitute in our view a severe restriction by themselves. This height generally marks in this area—with remarkable consistency—a sharp and significant change in the natural ecology from pastoral landscape to treeless moorland, and also the limit of large scale urban development in the past. We have therefore accepted it as a firm boundary to new development and a reasonable interpretation of the study area perimeter defined, in our terms of reference, as the 'hills and moors on the east'.

8.2 Various isolated pockets of restriction operate in the study area which we are not able to show clearly on fig. 8.1 because of its small scale. There is a scatter of sand and gravel deposits along the east side of the area which should be safeguarded until extraction is complete (fig. 5.4). Steep slopes over 1:10 occur along the river valleys and moor sides which are difficult to cross and may be expensive to build on (fig. 5.1). And Samlesbury and Werton airfields and the Royal Ordnance Factory at Chorley have surrounding areas within which, for operational or safety reasons, development must be controlled.

Infrastructure potential

8.3 There will be little difficulty in supplying the new town with water up to 1975 provided that all currently proposed schemes are completed in time. These include the development of boreholes in the Heighton, Brock and Scorton areas and new intakes on the Rivers Wyre and Hodder. It appears that the situation is generally easier north of the Ribble than south. Should there be any delays, supplies could be supplemented from either the Liverpool or Manchester aqueducts in the area. The Water Resources Board is at present considering schemes beyond 1975.

8.4 There will be no special problems in supplying the new town with electricity and gas on a normal scale. At least



8.1 Summary of restraints to development

The white area represents land with the maximum freedom for development.

A.L.	High quality agricultural land.
P	Peat.
L	Good landscape
N.B.	Land of outstanding natural beauty.
H.L.	High land (over 600' O.O.)
C	Shallow coal measures.
G.O.	Government Departments.
F	Land liable to flooding.

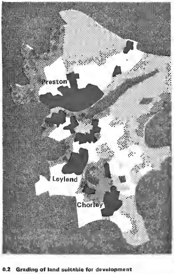
one major new power station is planned for the area by 1978. Large scale use of natural gas would however depend on extension of the trunk pipeline network.

8.5 There are three sewage works in the area south of the Ribble capable of expansion, some of them with spare capacity by 1969. These are the Chorley Municipal Borough works and those of the Leyland and Walton-le-Dale Urban Districts. The Preston County Borough works at Clifton Marsh, Freckleton, is capable of large scale expansion and can easily dispose of sewage from development north of the Ribble and a few limited areas to the south. A trunk sewer under the Ribble draining the Penwortham area is planned, and its capacity could be increased. This site at Freckleton is eminently suitable for the eventual economic treatment of sewage on a sub-regional basis. South of the Ribble special provision would be required for storm water run-off from developed areas, probably in the form of retention reservoirs and other regulating schemes to prevent overloading of the rivers. Problems are most serious in the low lying areas to the west of Leyland where flooding occurs already. Most of the remainder of the area lies in the Ribble drainage basin and presents fewer problems. To the north a large part of the study area lies in the Wyre basin. This would require extensive improvement of the drainage channels to prevent flooding. Solid refuse can be taken in bulk and dealt with at the Clifton Marsh works of Preston County Borough.

8.6 Our general conclusion is that the only development problems in the field of services lie with water supply, sewage and surface water disposal. Although the cost differential is not great compared with the total investment represented by development of the size envisaged, it appears that the advantage is with land north of the Ribble as far as water supply and sewage disposal are concerned. Surface water disposal is easy in the Ribble drainage basin but more difficult in the Wyre and Douglas basins where the rivers are overloaded and flooding already occurs on an extensive scale (fig. 7.8).

Transportation potential

8.7 The extensive motorway proposals within the study area have been planned to accommodate national and regional traffic rather than the short movements which will predominate within the new urban area. The motorways, therefore, although providing the study area with excellent communications to other parts of the country and region, have only a minor influence on the location of the new development which should aim to make maximum use of other parts of the existing road network. South of the Ribble A49 is very lightly loaded and has little frontage access where it runs parallel to M6. A similar situation is expected to arise on A6 when M61 is in use. B5252 running west to A49 from A6 opposite the proposed M61 junction north of Chorley, could be converted to a dual carriageway very economically. Other road improvements programmed are the Lostock Hall and Whaalton by-passes (fig. 7.3). If the Blackpool motorway were built the new Watery Lane Diversion to the north of the Ribble would provide a dual carriageway road with reserve capacity. A6 north of Preston is a single carriageway road which has been relieved of much of its traffic by M6. The remaining routes in the study area have only a limited potential



8.2 Grading of land suitable for development
Solid green indicates built up areas. Areas shaded green indicate land precluded from development in accordance with the summary of physical restraints diagram (fig. 8.1). The dark grey shade indicates land subject to major inhibitions and the light grey to minor inhibitions. The white land has no inhibitions.

and many of them are loaded to their practical capacity at the moment. There are in Preston, Leyland and Chorley clearance areas and undeveloped sites which will allow new highways to be built. However, the proposed new town will accelerate the natural need for rebuilding highway facilities due to the increasing pressure of population growth. Surplus railway land, both in old track and disused sidings, could provide a very valuable source of land through which to route major highways or on which to locate major road junctions.

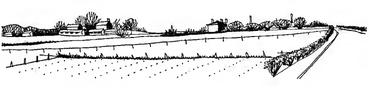
8.8 Within the study area the main north-south railway line may be electrified and this would improve the existing fast inter-city services to the new town. The stopping services between Blackpool and Manchester via Preston, Leyland, Chorley and Bolton could provide a major rail service for the development.

8.9 We conclude that, as one might expect, spare road capacity in the study area is scarce on major routes apart from the motorways. What there is of it appears mainly along the north-south axis represented by parts of A6 and A49 where they have been or are about to be relieved by motorway construction. The Watery Lane dual carriageway route between A59 and A583 avoiding the centre of Preston will have spare capacity if the Blackpool motorway is built, and 85252 could provide another east-west link further south between A6 and A49. Apart from the potentially highly satisfactory regional and national connections provided by the current motorway and trunk railway plans, there is the possibility of exploiting the existing commuter services on the Blackpool-Preston-Manchester railway to the benefit of the new town.

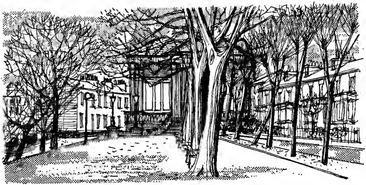
Conclusion

8.10 The foregoing paragraphs of this section have analysed the possibilities for development in the study area in terms of the physical suitability of the land and the capacity for growth of the present structure of services and communications. Fig. 8.2 attempts to synthesise the outcome as a grading of the land into three degrees of development potential. Within the limits of the study area defined by the areas shaded green the white land (about 23,750 acres) is clear of restriction. The pale grey shading (about 40,200 acres) stands for minor inhibitions such as uneven terrain. The land subject to major inhibitions (about 11,100 acres) is shown in dark grey shading to represent the conjunction of several minor restrictions or the presence of a major restraint like a pocket of high quality agricultural land.

8.11 The total area of land available in all three categories is about 75,000 acres which is enough for ¾ million people at a reasonably low gross density. We therefore have a reasonably wide choice in deciding where the new development should be and what form it might take, without encroaching on land that is needed for other purposes, or having to use areas where building development would be unduly expensive.



The Midge Hall, Farington Moss area, west of Leyland



Preston, above Avenham Park looking towards the Harris School of Arts and Crafts

Population growth

Existing population distribution

9.1 We anticipate here the proposal for a specific designation line set out in Section 16 and deal with the population within that line. This is because we wish in this part of the report to examine the implications of the proposed inflow of people for the consequent future total population, and to do this it is necessary to take an actual base population within a defined area. This applies also to Sections 10 and 11. As will be seen later the various options for possible designated areas all include the same main centres of population so that their total populations would all be very similar. What follows in this and the following two sections therefore relates specifically to the chosen area but at the same time is broadly applicable to all the options. The geographical distribution of the population in 1961 of the designated area proposed in Section 16 was—

Preston C.B.	113,350
Fulwood U.D.	16,000
Longridge U.D.	4,700
Chorley M.B.—less part of North Ward	30,750
Leyland U.D.—less part of St. John's Ward and St. James's Ward	19,350
Walton-le-Dale—less All Saints Ward	16,200
Parts of Chorley R.D. in the following parishes: All of Clayton-le-Woods, Cuerden and Euxton, parts of Charnock Richard, Coppull, Eccleston, Heath Charnock, Ulnes Walton and Whittle-le-Woods	15,100
Parts of Preston R.D. in the following parishes: All of Farington, Grimsargh, Haighton, Hothersall, Penwortham; parts of Broughton, Cuerdale, Goosnargh, Hutton, Lea, Longton, Ribchester, Samlesbury, Whittingham, Woodplumpton	29,300
TOTAL	244,750

Table 9.1 Annual intake and cumulative totals of incoming population over the first two decades

Year	Incoming Population Annual Intake	Cumulative Total	Year	Incoming Population Annual Intake	Cumulative Total
1969/70	650	650	1980/81	7,450	94,500
1970/71	1,400	2,050	1981/92	9,750	74,250
1971/72	3,000	5,050	1992/93	9,300	93,550
1972/73	4,900	9,850	1963/64	6,900	92,450
1973/74	8,500	19,350	1964/85	8,700	101,150
1874/75	7,200	23,550	1985/86	8,900	109,750
1975/76	9,900	30,450	1999/97	6,250	118,000
1976/77	6,600	37,050	1997/98	8,150	128,150
1877/78	8,300	43,350	1998/89	8,050	134,200
1979/79	9,000	49,350	1989/90	7,950	142,150
1979/80	7,700	57,050	1990/91	7,850	150,000

We estimate that the 1961 Census population of 244,750 had grown by mid-1966 to 253,000.

Forecasting assumptions

9.2 Because of the inherent difficulties of population projection, high and low forecasts have been made on the basis of high and low assumptions about the four variables affecting natural increase—

a) death rate
b) age at marriage } all affecting the birth rate
c) ultimate family size } all affecting the birth rate
d) family spacing } all affecting the birth rate

The high forecast assumes that the post-war trend will continue further, that marriages will take place at earlier ages and that there will be larger families. The low forecast assumes the average age at marriage will remain approximately what it is now and the number of births per marriage will be just below the recent level. The high and low forecasts take higher and lower gradual declines in death rate over the period with the percentage decrease being less in the older age groups than the younger. As far as the base population already in the area is concerned we have adapted the natural increase assumptions to allow for higher local death rates. For the whole group of factors the higher forecast approximates closely to the Registrar General's estimates, while the low assumptions give considerably smaller figures.

9.3 The other main assumptions which we have made in the projections are first that the age-sex structure of the incoming population will be similar to that of earlier new towns consisting predominantly of young married couples, some with young children, and others beginning families in their new homes. Movers to the North-West in 1960-61 varied little from this pattern. At the master planning stage in the study we shall re-examine this assumption in the light of any special factors due to the area from which people may come and the mechanism of selection. Secondly, we have assumed a rate of inward migration which would not be high, either in the early stages of rapid build-up or in t later steady state, as to exceed the likely capacity of construction industry. Table 9.1 sets out the assur annual intake of population year by year over the first decades with the corresponding running totals. We mate that, including the natural increase of both existing and the new population, the rate of growth sh not on this basis exceed 16,000 in any given year.

Population Projections

9.4 On the basis of assumptions described above, t population in 1991 in the proposed designation area wou be between 453,000 (low natural increase assumptions and 503,000 (high assumptions) (fig. 9.1). This is made up as follows—

Table 9.2 Basis of population projection for the area proposed for designation

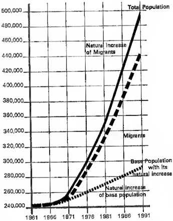
	High Natural Increase Assumptions	Low Natural Increase Assumptions
Base Population 1961	244,750	244,750
Natural increase of base population 1961-91	55,500	23,500
Migration estimate 1961-9	3,250	3,250
Inward migration 1969-91	150,000	150,000
Natural increase of migrants 1961-91	49,500	31,500
	503,000	453,000

We assume that all the migration into the area which takes place in the 1969-1991 plan period is part of the 150,000 planned intake. The land use calculations in the remainder of this report are based upon a total increase in population of 250,000 between 1966 and 1991 made up of the planned intake plus 100,000 natural increase. The natural increase shown in the above table totals 108,250. The 8,250 difference in these two figures is accounted for by the natural increase estimated to have taken place between 1961 and 1966. This is equivalent to the high natural increase figures and has been chosen to set an upper limit to population growth and the consequent land needs.

9.6 The age-sex structure of the population in the proposed designated area which can be expected between now and 1991 reflects the characteristics of the incoming population. While all age groups increase steadily over the period without fluctuations some of them increase much more rapidly than others (figs. 9.2 and 9.3). Thus, unless the type of family moving into the area is very different from that assumed, and from that normally most mobile, the proportion of young children will be well above the national average throughout the plan period. Since, however, the area already has a large population with an age distribution close to the national average, the impact of the incoming population should not produce at any stage an absolute decline in the numbers of school children, workers, or the elderly with their special needs. Taking the area as a whole it follows that there should be no problem of over-provision of schools or welfare services at any stage, though a sharp increase in such facilities will be needed at some periods and a more gentle increase at others. On a local level such fluctuations may occur in the areas where the incoming population is predominant. Services in these areas must therefore be planned in a way that enables the slack in one area to be taken up nearby.

9.6 We have calculated the rate of private household formation by adapting a method outlined in a paper by A. P. Walkden which applies headship rates to the population projections in various age-sex-marital condition categories to obtain numbers of household heads. On the high natural increase assumptions the following increases in numbers of households are expected for each five year period—

1971-76	1976-81	1981-86	1986-91
9,000	11,500	17,000	20,000



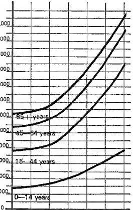
9.1 Population growth of the area proposed for designation
The natural increase of the base population is shown by the lower dotted line. The upper dotted line shows the result of adding the immigrant population. The solid line shows the result of adding the natural increase of immigrants to give the cumulative total (high forecast).

Thus in the first two decades after 1971 the number of private households will increase by about 57,500—from 85,000 to 143,500. During this period the average household size will increase from the present level of just under 3.0 to about 3.5. If we assume the low rate of natural increase the number of households stays at almost the same figure because of the smaller number of children in the average family.

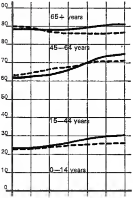
9.7 In considering the construction programme we have assumed that every extra household will occupy a separate dwelling so that the number of dwellings needed for the increase in population is as above. There are nearly 900 households sharing dwellings in the area at present, and any diminution of this will be included in the urban renewal element of the construction programme.

Beyond 1991

9.8 Even within the plan period the population growth which we have described takes the proposed development to the scale of an urban complex of half a million people—a very different concept from the earlier New Towns. Furthermore it would be unwise to take the first half million people as a top limit. While the question of continued expansion has not been considered in depth at this stage, natural increase alone of the 1991 population would give rise to further growth of 50,000 on low assumptions, and 80,000 on high assumptions, in the following ten years to 2001. It is also highly unlikely that inward migration, after being carried forward at a very high speed during the plan period, could suddenly be brought to a standstill at the end of it. There are many reasons why a more gradual tailing-off period may be required, with some further immigration as a necessary consequence. A considerable expansion must therefore be borne in mind as a possibility for the subsequent years. The plan must be drawn up in such a way that this can happen without destroying the form of the new town and reducing the facilities for easy movement and rich social and work opportunities which it will offer in the early years.



9.2 Age structure forecast
The total population is shown divided into four age groups. The curves show the increase of each age group over the plan period, according to the high forecast.



9.3 Percentages of population by age group
The solid line refers to the area proposed for designation (high forecast), the broken line to England as a whole.

Leyland—industry dominates the shopping centre

Employment and industry

The Work Force

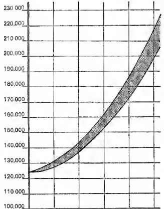
10.1 We have already discussed the present state of employment and industry in the study area in Section 4 which showed that the area has a developing service industry sector and a relatively strong manufacturing base, of which a large proportion is in growing industries. We concluded that the area was eminently suitable as a nucleus for expansion in Central Lancashire. The population growth will be determined in practice by the speed at which jobs are created. Given the target population, established at between 453,000 and 503,000 in Section 9, the corresponding need for jobs can be estimated by making assumptions about activity rates—the proportions of working men and women in each age group—and the pattern of work journeys in and out of the new town.

10.2 The activity rates we have used recognise the local tendency for a higher proportion of the total population to work than the national average, although this difference is likely to diminish as the national proportion continues to rise. We have also taken into account the national tendency for increasing numbers of married women to work, and the effect of the proposed raising of the school leaving age from 15 to 16 in the early 1970's. The present journey to work pattern follows from the fact that the proposed designated area provides employment for many people living outside it. In 1961 14,000 people travelled into the area each day to work compared with 7,000 who lived in the area and worked outside. This considerable net daily inflow of labour appears to have got bigger in recent years and we expect it to increase still further with the growth of the new town.

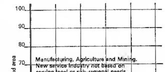
10.3 On the basis of these assumptions we estimate that the number of jobs required to match the population growth in the proposed designation area will increase from the present level of 124,000 to between 208,000 and 230,000 by 1991. Fig. 10.1 shows the projected rates of increase year by year corresponding to the upper and lower estimates.

Employment Growth

10.4 Over the growth period, employment can be expected to rise through the growth of existing manufacturing industry and the arrival of new. Service industry will also grow to meet the needs of the increased population in the proposed designation area, and there will be in addition an influx of service industry serving a larger popula-



10.1 Jobs required to match population growth (top right)
The grey band shows the difference between upper and lower estimates.



10.2 Percentage distribution of total employment (right)
The solid line indicates the fast rate of population increase and the broken line the slow rate of increase.

tion outside the area. The construction industry must also expand to meet the total needs of the new growth. Employment in mining and agriculture will, on the other hand, diminish. The relative distribution of employment among major industrial groups following from these patterns of growth and change is illustrated in fig. 10.2, expressed as percentages of the total employment. This also shows how the distribution may be expected to vary over the years until 1991.

10.5 In the early years of the development the main employment increase is likely to arise from the need for construction workers and the associated design and management people. A high level of industrialised building may result in many of these being factory workers. The service sector will also expand. We have shown in paragraph 4.8 that it is now growing to meet current needs but its rate of expansion must go much beyond this to meet the needs of the incoming population. While service and construction industries will grow inevitably as a result of the needs of the increasing population, it is clear that this growth will not be economically viable without the establishment of a sound and expanding base of manufacturing activities.

Industrial Growth

10.5 What is needed is a combination of industrial activities which will provide for employment growth in step with the population growth of the new town, and ultimately establish a group of inter-related activities which will together provide the basis for future growth and adaptation. This must, of course, be feasible in terms of the likely scale and type of future industrial movement into the area, and the growth of existing units. As we have already mentioned in Section 1, a study of such problems has been commissioned by the Department of Economic Affairs and is being carried out by Economic Consultants Limited.

10.7 This study has several aspects. The existing industries in the area have been investigated in order to discover their likely pattern of future growth. Analysis of the present operations and transactions of these firms will demonstrate the nature of the relationships between industries inside and outside the area, and this may indicate the possibilities for new industries to be set up within it. We expect the firms most likely to move into the area to be largely in those industries which have already shown mobility in recent years. Since the need to increase capacity is a major cause of movement, those sectors for which significant output increases are foreseen are of special interest, and firms within these sectors are an object of particular study. Broadly, these firms are in the engineering sector of manufacturing industry and have recently moved into the North-West region. As with the analysis of existing industry in the proposed designation area, the location of sources of supply of input materials and the destinations of finished products are being examined. The total analysis will provide an indication of the impact which industry coming into the growth area can expect to make in terms of building-up *the basis* for continuing expansion.

10.8 Since shortage of the required types of labour can inhibit industrial expansion, studies are also being carried out into the labour requirements of new and existing industry. Manufacturers now within the proposed designation area have indicated that there are shortages of most types of skilled labour. Special attention is therefore being given to problems of the training and adaptation of the existing work force in response to changes in technology and the local structure of industry. At the same time it is expected that studies of firms which have recently moved into the area will provide much information on the new types of skill required.

10.9 As a result of these studies it will be possible to refine and check the estimates for the growth of industrial employment necessary at the various stages of the proposed expansion, and to indicate the best industrial structure for the area to ensure continuing economic growth. While these studies are of undoubted advantage in providing basic knowledge for the commencement and continuation of growth, there will be the need for action to publicise the present and potential advantages of the area to prospective new employers and employees. There will be a general need for more advice and assistance in increasing the productivity and effectiveness of existing and new industry and in the re-allocation of labour from declining industries. The early fulfilment of these conditions will greatly assist the rapid growth of employment in the new development. If the established foundations for expansion are thus effectively consolidated, the proposed population targets will be reached.

Conclusion

10.10 As the degree of expansion of the service and construction industries has already been discussed, it is now appropriate to incorporate them in an estimate for 1991 of total employment by broad sectors of activity. This estimate, which is based on the achievement of the maximum degree of population growth, is set out in Table 10.1.

Table 10.1 Indicated orders of magnitude of employment growth in sectors

	1966	1991	Increase	
Sector	Thousands			%
Primary	2	–	–2	–
Manufacturing	63	104	41	65
Construction	10	16	6	60
Sub-Total	75	120	45	60
Service	50	110	60	120
TOTAL	125	230	105	84

From the table it may be seen that the rate of growth in service employment exceeds that in manufacturing and construction. Nevertheless, the growth required in these two sectors is very substantial. The relationship between the various sectors of employment as the development progresses will provide a major part of the phasing analysis to be undertaken in the Master Plan stage.

10.11 In paragraphs 4.9 to 4.11 we set out our reasons for believing that the area is capable of attracting people and industry on a large scale. It is sufficient to recall our conclusion that expansion on such a scale in Central Lancashire appears to be most feasible at the location chosen for development.

Building resources

Resources

11.1 In 1965 the construction industry of the North-West region employed 188,900 people, forming 6¼% of the total employed population of the region. Not only is this significantly less than the national average of 7½% but the construction labour force in the region is growing no faster than the national force. Although much of the construction industry is concentrated in the Mersey and South-East Lancashire conurbations, 13½% of the total force is found in the five main towns in or around the study area—Blackburn, Blackpool, Bolton, Preston and Wigan (referred to as the local labour force in Table 11.1 below).

11.2 The region contains 10,081 firms, but only 343 of these (3½%) employ more than 50 people. From the size of firms it could be assumed that there are few with highly developed management structures capable of expansion—this despite the fact that the ratio of administrative and clerical employees to the total, at 12.4%, is higher than in most regions. A weakness in management could be an explanation of the relatively low productivity—about 7% less than the national average—in all but the smallest and largest firms.

11.3 The region is not self-sufficient for all building materials. Glass is a particular product of the area, and 10% of the national output of bricks is produced in Lancashire. Sand and gravel are extracted locally, but both these and large aggregates are also brought in quantity from the Lake District and North Wales. Because of its good road, rail and sea communications it is easy to bring in bulky construction materials. Nevertheless they must be brought in even to satisfy the present demand.

11.4 In the Liverpool and Manchester areas there are in existence, or being established, plants for the large scale manufacture of heavy panel housing systems. The output from these is aimed initially at the existing cities and present new towns, but they provide as well an immediate source of industrialised components for the early stages of the new town. A consortium for non-residential building (ONWARD) has also been established covering Lancashire, Cumberland and Westmorland. Initially, this will use techniques originated by the Lancashire County Council—rationalised methods suitable for competitive tendering by any contractor.

Current Demand

11.5 The demand for construction in the region is currently in the order of £400m. a year. The resources of labour, material supply and firms are sufficient to handle this, but there is apparently little extra capacity. In 1965 the region built 45,726 dwellings. Of these 23,425 were outside the Mersey and South-East Lancashire conurbations. The North-West Regional Study showed that within the Preston and Chorley sub-regions there were 19,660 dwellings ripe for demolition and redevelopment between 1964 and 1981, an average of 1,090 each year. At present the demolition rate is running at about 770 dwellings a year.

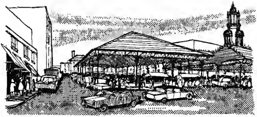
Demand of the New Town

11.6 The additional demand created by the new town will fall into two parts—the need for new dwellings, other buildings and infrastructure on virgin sites, and the accelerated renewal of dwellings and other structures within the existing towns. Table 11.1 shows the effect of this demand in labour force requirements in the first and second decades of the town's growth. It gives a measure of the scale of the problem, and indicates clearly that meeting the additional demand will be beyond the existing resources of the study area on its own.

Table 11.1 New town—additional labour demand
(figures for an average year)

	First decade	Second decade
Labour force required for all new construction (assuming present levels of productivity)	10,900	16,400
Additional labour as a % of existing labour force (1966)—locally	43%	64%
regionally	5¾%	8½%

11.7 Because the scale and complexity of the problem was foreseen when this project was commissioned, the terms of reference, as we mentioned in Section 1, made provision for a study of all the processes necessary to implement such a programme. This, the Methods Study, is now setting out its preliminary findings. These show that the demand could be met by a comprehensive programme at regional level. This programme calls for rationalised methods of design and contract administration, the use of industrialised building and user consortia, and vigorous recruitment and retraining of labour. The most difficult factor to assess is the increase in demand from the other large cities and new towns in the region. These investigations are continuing; the final Methods Report will be published as part of the Master Plan.



Preston Market

part 4

Proposals

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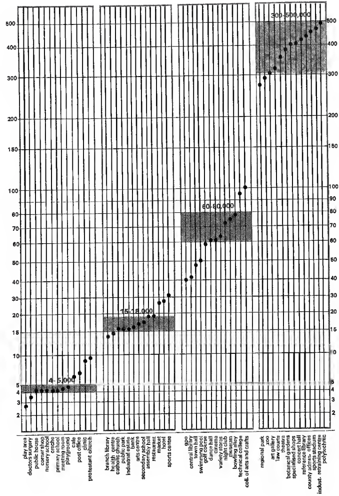
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0
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4
3
2
play area
doctors surgery
public house
corner shop
nursery school
creche
primary school
meeting room
playground
cafe
post office
clinic
protestant church
branch library
health centre
catholic church
public park
industrial estate
bank
arts centre
secondary school
assembly hall
restaurant
market
hotel
sports centre
gpo
central library
town hall
swimming pool
golf course
dance hall
cinema
variety stores
night club
museum
bowling alley
technical college
coll. of arts and crafts
regional park
zoo
art gallery
law courts
theatre
botanical gardens
specialised shops
concert hall
reference library
county admin. offices
sports stadium
indust. retraining centre
polytechnic

Theoretical basis of urban form

Minimum viable communities

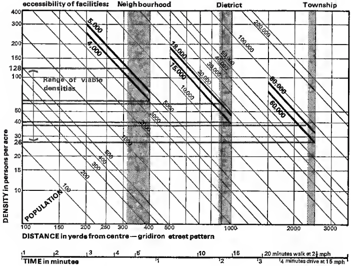
12.1 All large towns are made up of a variety of more or less distinct parts. These parts, and the relationships between them constitute the physical, economic and social structure of the town. We aim to establish for the new city a basic idea of the structure which will best meet social and economic needs, provide a workable travel system, and be satisfactory at each stage of the development from the earliest possible moment. This approach will be pursued in depth as part of the Master Plan stage of the study. Meanwhile our main lines of thought so far are set out below as a brief guide to the design principles on which we have based our choice of the area to be designated.

12.2 From a survey of the catchments of social facilities provided in post-war new towns, together with an examination of the range of major facilities present in existing large towns in the North West region, we have drawn up a scale which relates facilities to size of population served. This survey suggests that in terms of average catchment, facilities tend to group at four levels as shown in fig. 12.1. Clusters of more or less equal catchment appear to occur in population bands of 4,000-5,000 (the neighbourhood), 15,000-18,000 (the district), 60,000-80,000 (the township) and 300,000-500,000 (the city). This does not necessarily indicate that a town or city falling within a given figure of population will possess all the facilities shown against that figure in the diagram, nor that it will lack all those dependent on a bigger catchment. In practice, towns and cities within the higher ranges of population vary widely in the provision of certain groups of associated facilities according to the extent of their external influence. Nevertheless, we believe that there is a broad pattern which is coherent enough to serve as the starting point for a plan.

12.3 The facilities which will be required by the proposed growth area extend from local provisions for a small number of households to the corporate needs of the whole city and the region. The nature of the facilities also covers a wide scale, from those needed every day by some people to those used once a year by others. The study of catchment size in relation to function indicates the population level at which a facility can operate most efficiently. The social considerations which affect the location of these facilities within the community must also include an assessment of the convenient distance or journey time from journey origin to the location of the facility, the density of popula-

Note: The word facility is used throughout to distinguish a particular part of a group of related activities to which as a whole we apply the term function.

12.1 Catchment of facilities
This diagram relates facilities to size of population served. The green shaded areas indicate greatest coincidence of catchments. The vertical logarithmic scale shows population in thousands.



12.2 Population, density and time/distance relationships
If two of the three variables are determined the third can be deduced from the diagram. All scales are logarithmic. The examples shown in the diagram refer to the lower three group sizes of population shown in fig. 12.1 (neighbourhood, district and township). For each of these three units the combination of upper and lower population sizes and distances from the centre produce upper and lower densities. The mid point of the density range in each case has been applied in the calculation of space needs (section 13).

Example:

For the neighbourhood (population range 4,000—5,000), the grey band shows the acceptable distance range (325-400 yards). The points of intersection of the left hand edge of the grey band and the 5,000 population line, and the right hand edge of the grey band and the 4,000 population line, when projected to the left on to the vertical density scale, show a maximum of 128 p.p.a. and a minimum of 55 p.p.a.

tion served, the total quantity required to serve a given population and the minimum viable size of the facility. The size of facility and its probable catchment in relation to the other variables governs the point in time at which it can be provided in a new community which is being built at a given rate. This is a major concern if the maximum opportunity for social integration of the incoming population is to be achieved early. Fig. 12.2 demonstrates a possible set of relationships based on the lower three of the population levels mentioned in paragraph 12.2. A further important consideration is that of the convenient grouping of facilities. A working mother taking her child to primary school, for instance, may wish to use the local shops at the same time, and perhaps need to find somewhere to have lunch, so that all these services must be available near suitable workplaces. Fig. 12.14 shows another example of related facilities. There are clear advantages in trying to anticipate this need for functional linkages at various levels of catchment, journey time and mode of travel so that the possibility of modifying grouping based on catchment alone may be tested.

12.4 The levels of population required to support efficient and frequent transport facilities have also been briefly examined. We conclude provisionally that a population of 60,000—80,000 can support a local bus service, and half a million population can support a city express transport system providing, in both cases, that the development is suitably designed to bring access, convenience and service economics into balance.

12.5 It is essential for social and economic success that the new town should be constructed in stages of growth which are self-sufficient as soon as they are occupied. This need not imply that each stage has to be identical in size or nature. Indeed economic, social and technological considerations will impose a variety of size and character among the component parts of the town. Our study of methods of implementation has shown that no conflict need arise between the definition of minimum viable building units from a construction point of view, and the socially or economically desirable unit sizes based on catchment and convenience.

12.6 The sizes of urban units of development which appear to us to fulfil social needs best and which can support complementary facilities at economically viable levels are—

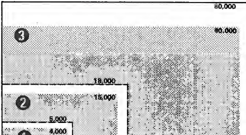
(a) The neighbourhood—population 4,000-5,000 with the provision of local shops, primary school and the other facilities appropriate to this catchment as indicated in fig. 12.1.

(b) The district—population 15,000-18,000, the equivalent of four neighbourhoods. Facilities provided include a secondary school, a shopping centre, branch library, health centre and an industrial estate.

(c) The township—population 60,000-80,000, the approximate equivalent of four districts. Provision of a town centre which includes variety stores, service industry and a wide range of retail, recreational and social facilities (fig. 12.3).

(d) The city—population 300,000-500,000. At this size the full range of major city scale facilities can be supported. These might include, for example, a concert hall, art gallery and theatre, a polytechnic and industrial training centre, a zoo, botanical gardens, and a regional park and sports stadium as well as major shopping, administrative and other specialised functions.

The possibility of building up to this latter scale offers the most exciting prospect for the new development. If a new city can be created by the close inter-connection of a number of rapidly growing townships whose central functions are continuously expanded in parallel with growth, the whole complex will then attract the complete range of city scale facilities which are at present regionally available only in the congested cores of Liverpool and Manchester.



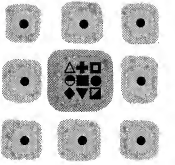
12.3 Sizes of viable communities
Areas proportional to population at a constant density.

Distribution of functions

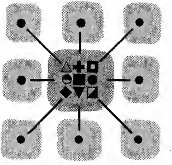
12.7 The land use pattern of most existing cities is shown diagrammatically in fig. 12.4. All major functions are concentrated in the traditional city centre. Grouped around are small suburbs of between district and township size each having a centre which provides solely for the day to day needs of that unit, leaving a large unsatisfied demand which can only be met in the city centre. Because all desire lines lead to the major centre the resulting communications pattern is that of a radial system of roads linking each smaller unit to the central area (fig. 12.5) which attracts the lion's share of services that could be supported by the suburban populations. Peripheral inter-connections are largely absent and all journeys within the city tend to be routed through the centre where there is least road space to take them, with consequent congestion and almost insuperable remodelling problems. Such structures are usually less the result of deliberate intent than the consequence of peripheral growth based on an older urban core sited at an intersection of routes which have naturally formed the generating lines for expansion.

12.8 The obvious alternative in a situation where growth can be planned is to disperse some of the major city scale facilities among the different townships, and make sure at the same time that each has its proper share of the functions justified by the population catchment which it can provide (fig. 12.6). Each community now has an individual function and identity within an integrated urban complex. The communications pattern required to serve this complex of towns as shown in fig. 12.7 is distributive rather than centralised, and enables each unit to act equally well as an independent township and as part of the city. As a basis for growth without radical reconstruction of any of the parts such a system seems economically and socially attractive. Traffic flows are levelled out over a large area and localised congestion is reduced. The different identity of each township and the interdependence of all of them encourage a more varied and random interaction of human activity, provide each of the inhabitants with a wide range of choice, and enhance the sense of living in a city. There is still within this structure an essential role for a major centre where a large proportion of the city scale functions can be concentrated—excessive dispersal is as bad as excessive concentration. What we propose is an economically balanced system of identifiable townships in which all are interdependent and one, the centre of the city region, is the first among equals.

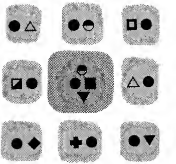
12.9 A survey of retailing, education, recreation and work in Central Lancashire and the surrounding region shows that every town has in fact developed a set of individual characteristics (fig. 12.8). Each has a specialised role for some functions while depending on surrounding towns for some others. Chorley, for example, tends to attract people for entertainment and shopping while being dependent on Preston for office employment and other services. This unplanned distribution of functions does not always work satisfactorily. Where an extremely unbalanced situation occurs as in a town like Leyland, where many people come to work but the social facilities for the inhabitants are poor, it is desirable to consider ways of restoring the balance.



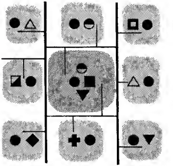
12.4 Concentration of major city functions
Black circles indicate local functions serving only day-to-day needs. Other symbols represent major city functions which in this case are shown concentrated in the traditional city centre.



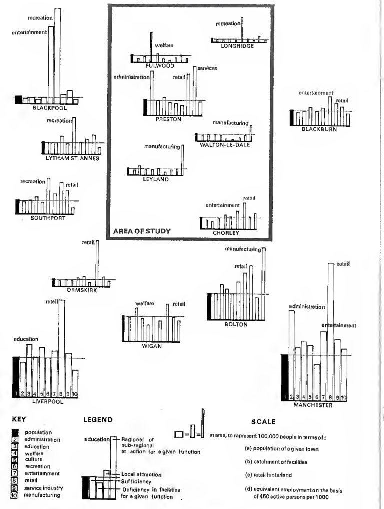
12.5 Movement pattern arising from concentration of major city functions
All major communication routes converge at the centre.



12.6 Dispersal of major city functions
Some of the major city scale functions are shown dispersed among the different suburbs in addition to their local functions. The suburbs can now become identifiable districts or townships.



12.7 Movement pattern arising from dispersal of major city functions
A distributive rather than centralised transportation system is required. The townships need equal access to each other and the centre. The enrichment of the townships gives a city sense to the whole structure without prejudicing the dominant role of the centre.


recreation
entertainment
BLACKPOOL
recreation
LYTHAM ST ANNES
recreation
retail
SOUTHPORT
retail
ORMSKIRK
retail
education
LIVERPOOL
1
2
3
4
5
6
7
8
9
10
recreation
LONGRIDGE
welfare
FULWOOD
services
administration
retail
PRESTON
manufacturing
WALTON-LE-DALE
manufacturing
LEYLAND
retail
entertainment
CHORLEY
AREA OF STUDY
entertainment
retail
BLACKBURN
manufacturing
retail
BOLTON
welfare
retail
WIGAN
retail
administration
entertainment
MANCHESTER
1
2
3
4
5
6
7
8
9
10
KEY
1 population
2 administration
3 education
4 welfare
5 culture
6 recreation
7 entertainment
8 retail
9 service industry
10 manufacturing
LEGEND
education
Regional or sub-regional at action for a given function
Local attraction
Sufficiency
Deficiency in facilities for a given function
SCALE
in area, to represent 100,000 people in terms of:
(a) population of a given town
(b) catchment of facilities
(c) retail hinterland
(d) equivalent employment on the basis of 450 active persons per 1000

12.10 We suggest that the proposed influx of people, investment and industry to central Lancashire is therefore used as a major opportunity for improving the provision of community facilities and employment places in areas where major deficiencies exist. At the same time the facilities of attractive towns can be reinforced to allow them to continue in an unchanged functional relationship with other communities in the new city. It is important also to assist adjoining areas by taking account of their new and expanded regional functions in relation to the new growth, and helping them to exploit the opportunities for development which will follow. The existing structure of regional functions in central Lancashire must be complemented and enlarged by the incorporation of major new functions for which the region is at present dependent on the south Lancashire conurbations.

Transportation structures

12.11 The principal transportation objective is the design of a system which takes account of a high level of car ownership, achieves the integration of all forms of transport and incorporates the possibility of a change in emphasis from private to public transport as the new town grows. Public and private transport are best served by very different forms of development. The latter needs dispersal to achieve maximum accessibility at low construction cost. The former requires concentration to bring the maximum number of people as close as possible to the stopping points and produce an economic demand on the routes to be served. The new town should be planned on the basis of an integrated transportation system that combines maximum accessibility by private and public transport at an acceptable cost. The design must also be flexible enough to accommodate the changing traffic demands at all stages of growth. Certain principles follow from these basic objectives—

(a) No concentration of land uses should be allowed to develop in such a way that costs of access become prohibitive.

(b) Primary land uses should be so distributed as to minimise tidal movements and achieve the maximum balance of peak traffic flows.

(c) Primary land uses should be developed as a series of environmental areas from which extraneous traffic is excluded.

(d) Consequently the highway network should be planned on hierarchical principles. The primary roads should be routed between environmental areas and all through traffic channelled to them. Town traffic should be routed to different categories of highway, according to the length of the journey.

(e) The public transport system should also be planned on an hierarchical basis to produce maximum accessibility and service potential.

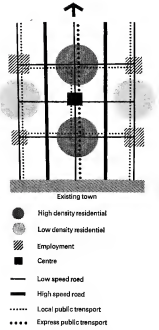
12.12 A number of different transportation structures have been designed and studied by the Transportation Consultants in connection with other planning projects. A comparison of different urban forms was made by using a computer to simulate the future peak hour work journey flows on the roads. The public and private transport facilities that might be required to accommodate the travel demands were also evaluated. The forms examined

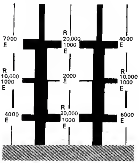
12.8 Distribution of existing functions in the region
The individual characteristics of the towns and cities in the region emerge clearly from this diagram.

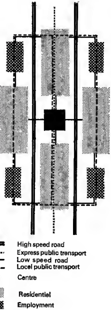
12.9 The three strand structure (left)
This structure relates to a theoretical township of 60,000 population in the context of directional expansion of an existing town.

12.10 Peak hour work traffic flow (bottom left)
This diagram indicates the relative volume of two direction traffic flow generated by the residential population (R) and employment (E) figures shown. The spine road is sufficiently lightly loaded for express public transport to operate on it without conflict with private cars.

12.11 Three strand structure, theoretical community distribution (below)
The 60,000 township is shown as comprising four districts of 15,000, four main employment areas and one town centre.



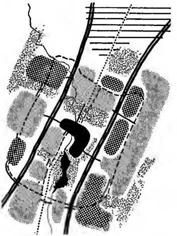




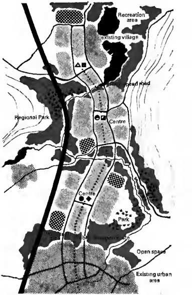
ranged from the traditional radial-concentric cartwheel form to a single strand linear form and on to multi-strand forms of linear development. In general it was found that the problems posed by a radial-concentric urban form, as shown by the congestion experienced in most cities today, require extremely costly solutions even with a rationalised land use distribution.

12.13 The urban form that best combined the principles enumerated in paragraph 12.10 into an integrated, flexible and economic solution was the 'three strand structure' (fig. 12.9). This work related to a theoretical township of 60,000 population added to an existing town. The disposition and size of units in the township were defined but not the character nor the internal organisation of the units. The 'three strand structure' comprises two longitudinal high speed roads and a spine road for inter-township movements and secondary transverse routes for inter-district movements. The land use distribution and relative attractiveness of the high speed roads result in the spine route being sufficiently lightly loaded for express public transport to operate on it without conflict with the demands of private transport (fig. 12.10). The local public transport operates on the transverse routes, and connects to the express system on the spine road. Large land use concentrations such as town centres require a high level of public transport and consequently should be associated with the express public transport spine routes. The land uses dispersed outside the high speed roads should be planned on the basis of a high level of accessibility by private transport combined with an attractive local public transport service (fig. 12.11).

12.14 Fig. 12.12 demonstrates the translation of such a structure into a 60,000 township as it might appear on the ground after making the necessary assumptions about different kinds of accessibility and the disposition and density of different land uses which follow. The order of size is about 3½ miles in the direction of the primary routes and 2 miles across. For the system to work at all, it is essential that direct connections to adjacent townships should only occur by way of the primary routes without sharp changes of direction or major branching which would reduce the capacity of the system and lower its economic efficiency. Fig. 12.13 illustrates diagrammatically the kind of extended structure of linear townships which logically emerges. This is the urban form which we consider is appropriate to the conditions in the study area, and on which we have based the various development options described in paragraph 14.9 and Section 15.



12.12 **The three strand structure applied to possible site conditions**



12.13 **The three strand structure on the city scale**
An extended structure of linked townships logically emerges.

Theoretical structure of city functions

12.15 An analysis of the degree to which the major city functions can be dispersed shows that certain of them tend to group together for functional reasons. An example of such an association based on education is shown in fig. 12.14. This also suggests that certain facilities tend to link the educational function with manufacturing and cultural functions. Fig 12.15 shows the full extent of essential linkages stemming from the basic educational functions. These linkages require various forms of inter-communication and the need for a high level of accessibility between the component parts of the total structure is implicit. On this basis it is possible to devise a theoretical structure of city functions by means of a sequence of logical steps—

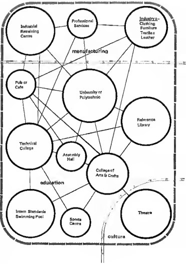
(a) The existing provision and distribution of major functions in central and south Lancashire is examined in fig. 12.8. This indicates the relationships between various towns on the basis of variations in the provision of services catering for administration, education, welfare, recreation, retailing, commerce and industry.

(b) The major functions likely to be required by the population in central Lancashire at the end of the plan period (1991) are then compared with the existing major functions, and distributed over each of a number of existing and proposed towns in the study area according to its present functions, location and physical characteristics, or to its suitability for new functions (fig. 12.16).

(c) The essential administrative, education, welfare, recreational, retail and other facilities which are associated with the major functions allocated to a township can be grouped at the town centre and the district centres. This grouping of functionally associated facilities in the same town can help to endow each township with a distinct identity, and improve the convenience and attraction of all levels of the township and city structure.

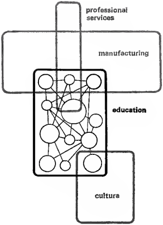
(d) All townships are inter-connected by a linear distributive communication pattern, enabling each township to act as a specialised magnet without causing congestion in any of the others.

We believe that this approach, suitably refined during the Master Plan stage, can establish the basis of a flexible and dynamic structure for city growth.

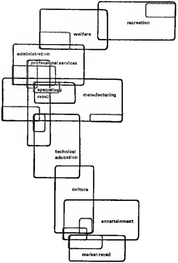


12.14 Grouping of associated facilities forming a major function

This example shows the linkages between the different facilities forming the educational function on the city scale, and their interrelationship to other functions such as manufacturing industry and culture.



12.15 Linkage of education with other major functions
Some of the educational facilities are shared with other functional groups. These make up a complex of city scale functions suitable for addition to a township centre.



12.16 Possible ultimate disposition of functions in the area proposed for designation
The extent and location of existing functions are shown in green. These form the basis for a distribution of inter-related functions within the overall linear city structure. Some will be part of existing towns expanded, some will be in new townships.

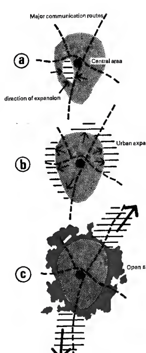
Growth and change

12.16 A plan for a growth area must incorporate sufficient flexibility to allow for future growth and changing conditions. This problem will be studied in detail in the Master Plan. At this stage it is only necessary to rehearse the broad requirements—

(a) A plan must be valid, not for a particular point in time but as early, and for as long, as possible. The infrastructure networks must therefore have inbuilt expansion capacity.

(b) According to the pressure of events expansion should be possible in any of three ways together or separately. Firstly by internal expansion through infilling on specially reserved parcels of land, or increasing density by means of large or small scale renewal. Sites for future requirements should be reserved in a manner calculated to disturb established social patterns as little as possible (fig. 12.17a). Secondly, by peripheral expansion. This form may increase congestion and is not recommended on a large scale. Control will be required to safeguard open space between towns and to preserve their individual identity (fig. 12.17b). Thirdly, by adding new units in a directional growth (fig. 12.17c). This more than any other form of expansion requires forethought at the design stage. Infrastructure and transportation networks must be designed for considerable extension.

(c) A plan should make obvious and natural the ways in which development can best take place and make difficult and unacceptable the ways it should not. Above all, change and growth must not imply the disruption of well-balanced communities.



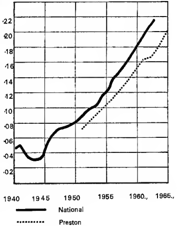
12.17 Forms of urban growth
(a) Infilling or renewal.
(b) Peripheral expansion—not appropriate for large scale growth.
(c) Directional growth by the addition of new units.

Environmental objectives

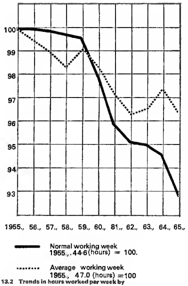
13.1 There are two major aims which must be fulfilled if the new town is to succeed. It must provide jobs for the growing population, and create the highest possible standard of environment for both existing and new development. This Section is concerned with the latter. The trends which are most likely to influence what people will want in the future are increases in personal mobility, in leisure and in affluence (figs 13.1-13.3). It is necessary to reconcile the new pressures on land that will result with the overall demands of a rising population and the general trend for people to concentrate in towns. The new town must be able to accommodate these changes by striking a balance between the disruption of social well being on one hand, and the destruction of the natural environment on the other.

13.2 The new development should not impose a uniform pattern. It should make the most of the great variety of settlements included in, or near to, the area of search. Each of these settlements will require its own standards of residential density, industrial location, social, retailing and recreational facilities to enable it to achieve a distinctive type of environment, co-existing and inter-related with other types in the context of a large city. This combination of different types of environment in a single coherent structure will enlarge the element of choice and variety in the visual scene, and in social activity, which should characterise a large city.

13.3 In Lancashire, as in all traditional industrial areas, the juxtaposition of home and workplace has had a marked effect on social life, and has probably contributed much to the characteristic social cohesion of such areas. In recent decades, however, higher living standards, better transport and the massive provision of public housing have offered the valid alternative of a home on a new housing estate which is likely to be remote from the work place of most of its residents. In spite of the monotony and general lack of character of many inter-war and early post war estates, it has been mostly the younger and more prosperous families that have chosen to move into them, leaving the grimy and dilapidated nineteenth century houses in the main to the older, poorer and less fortunate families. This segregation of home and workplace and of different strata of the population is undesirable for various reasons. Peak-hour traffic congestion has hastened the economic decline of the older housing areas and undermined the social and life-cycle integration of the community as a whole. What is required is a closer association of different types of housing, (old peoples' dwellings, family housing, hostels), each with the others and with other urban functions including industrial and commercial buildings. Clearly certain types of industry, such as those requiring large scale operation or those that are obnoxious



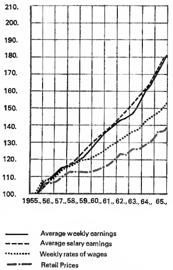
13.1 Vehicle ownerships per head of population
The new city must provide space to satisfy the rapidly increasing demand for personal mobility.



13.2 Trends in hours worked per week by manual workers.

Source—Ministry of Labour Gazette.

The new city must provide space for the rapid increase in leisure activity.



13.3 Trends in weekly rates of wages and earnings

Source—Ministry of Labour Gazette.

The new city must provide space to satisfy the rapidly increasing demand for higher standards of accommodation and a wider range of choice.

and visually non-conforming, would require separation. Wherever possible, however, the pattern of land use should be designed to offer a wide range of choice and convenience to residents, with local educational, employment and consumer opportunities to suit all members of the family. There is no reason today why any of these provisions should be incompatible with high environmental standards.

Residential areas

13.4 The range of space standards proposed for residential areas has been related to the scale of viable urban units set out in Section 12—neighbourhoods, districts and townships. We have also made allowance for the integration of employment places in these areas. We have worked to a related set of standards—

(a) Township centres to have high density communities grouped around them with ease of access to large open spaces. Socially cohesive neighbourhoods at lower densities elsewhere, centred on intimate streets and courtyards designed and landscaped as meeting places and safe play areas. Housing in general to be low rise. Basic social facilities such as a primary school, local shops, meeting room, public house and bus stop to be within convenient walking distance of every home (fig. 13.4).

(b) A minimum provision of one car space per dwelling with additional parking space for visitors. Separation of pedestrian and vehicular movement.

(c) A high standard of design and layout. Landscaping and screening of roads and car parks. Emphasis on privacy within the home and on informal contact without.

(d) Private open space for all family houses. Play areas, parks and other forms of public space to be provided in accordance with the standards set out in paragraph 13.8.

The range of densities proposed to achieve these aims is shown in Table 13.1—

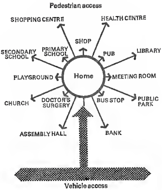
Table 13.1 Residential densities

Type of Residential Area	Range of net Residential Density p.p.a.
Existing Development	
(i) town centre	80-100
(ii) residential area	40-60
(iii) village	determined by local considerations
New Development	
(i) township centre	100-120
(ii) districts	30-60

Employment and industry

13.5 The new town must provide employment areas which meet the needs of employers and are convenient and agreeable for workers. The range of industrial space standards should reflect the following influences—

(a) The increasing pace of automation in manufacturing industry, reducing the density of workers and intensifying the need for growth and flexibility in the use of sites.



13.4 Relationship of home to local facilities
The facilities shown nearer the home are those used most frequently and therefore require direct pedestrian access. The others should also be linked to the pedestrian network of the township although they will rely more on good vehicular access.

(b) The increasing use of cars by individual workers requiring greater space for parking and peak traffic flows.

(c) Possible changes in the amount and proportion of extractive, manufacturing and service industries at different stages of growth.

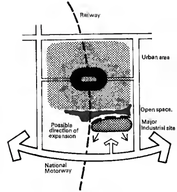
13.6 The convergence of work journeys towards one area must be kept to a manageable level to avoid traffic congestion. Sites attractive for all types of industry suitable for the area must be available. A variety of employment opportunities, particularly for women, must be available within a convenient distance of home and, finally, the work environment should be as attractive as possible. To achieve these aims we suggest the following distribution of work places—

(a) Major industrial sites for large plants which, because of their size or the nature of the processes carried out, require large flat open space and convenient access to national and regional road and rail networks, good location for drawing suitable labour from within and beyond the area, practically unlimited potential for expansion and ample provision for the disposal of industrial effluents (fig. 13.5).

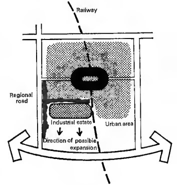
(b) Industrial estates concentrating industries requiring immediate access to regional transport networks and to urban areas offering a wide choice of labour skills. The size of the sites should permit a sufficient degree of flexibility to enable individual firms to grow by expansion or exchange of premises nearby. The size of estate should also be capable of providing those facilities especially geared to the requirements of industries which are best grouped together, and the extra facilities likely to be provided in the future such as commercial banking, computer services, transport depots and retail facilities (fig. 13.6).

(c) Dispersed sites for industries such as research laboratories and drawing offices which can relate satisfactorily to a predominantly residential environment. Convenient access to local and regional transport networks, proximity to retail and social facilities and allowance for controlled expansion are also essential (fig. 13.7).

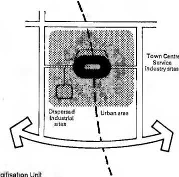
(d) Town centre sites suitable for service industries such as professional, local government, education, entertainment, catering and other services requiring immediate contact with consumers and clients. Good access to local, regional and national communications—particularly public transport (fig. 13 7).



13.5 Major industrial sites (top)
For the type of industry which must be separated from urban areas and needs direct links to national road and rail networks.



13.6 Industrial estates (centre)
For those types of industry which can be more closely related to urban areas.


Railway
Town Centre Service industry sites
Dispersed Industrial sites
Urban area

13.7 Dispersed industry (bottom)
For industries which can be integrated with urban areas.

The space standards adopted allow for industrial estates which will mainly accommodate manufacturing industries and have been based on a figure of 30-35 workers per acre.

Retailing

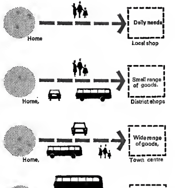
13.7 The retailing provision required to satisfy the various needs of shoppers falls into four broad categories—local shop or cluster (neighbourhood shops), community shopping (district centre), town centre and specialised regional shopping. From the consumers' point of view this hierarchy allows for various types of shopping, from day to day needs to weekly bulk purchase and the selection of more expensive goods from a wide range of choice. On the supply side, such a hierarchy is needed to attract the appropriate type of establishment. Durable goods shops need large catchments to make them profitable. A centre may thrive as a result of the opening of one or two key shops from chains with high drawing power, and such chains operate with a certain threshold population in mind. Thus, the amount of shopping in a town will to some extent depend partly on its proximity to larger towns. Similarly, communities near to a large centre may need little or no shopping provision. We propose four levels of retailing as follows—

(a) The local shop provided in all neighbourhoods at convenient access for pedestrians (5 minutes average walking distance) for the sale of convenience goods for day to day consumption. Limited parking provision. Integration with other local facilities.

(b) Community shopping provided in a limited number of residential districts, within 6-7 minute walking distance of a third to a half of their notional catchment, and catering for convenience goods and a small range of durable goods. Parking provision to be examined on the basis of density and distance-catchment relationships. Access to public transport.

(c) Township centre shops accessible to pedestrians as well as by private and public transport, catering for convenience goods and a wide range of durable goods and including large variety stores. Generous parking provision is necessary. Easiest and shortest access by local and inter-city public transport.

(d) Regional specialised shopping specialising in retail trades where wide choice is required. Accessible by public and private transport and serving the whole city. Parking provision high but proportionately less than in township centres and based on a range of other demands in addition to the shopping load. Direct and convenient access to regional and national public transport routes (fig. 13.6).



13.6 Access from home to different levels of shopping
In each case the method of access most likely to be used is shown above the arrow.

Education and social facilities

13.8 The bulge and subsequent waves in school population which, as mentioned in Section 9, will occur at a local though not at an overall level, highlight the need for a flexible provision of educational facilities. Schools provided early in the life of a new town tend at first to be rather under used, particularly in the evenings. On the other hand, social activities—manifestations of parental, political, athletic, hobby and recreational interests—are generally severely handicapped by the shortage of suitable space. Immense benefits—financial as well as social—could result from the pooling of educational and social facilities in a flexible building group designed for multiple use. In the past many of the more specialised organisations have had to wait years until funds were available to provide premises to satisfy their needs.

13.9 A two form entry primary school is likely to serve a resident population of about four to five thousand, and it could well serve those organisations of local character which do not make special demands for accommodation. As the school population expands, and as social activities become more specialised, the primary school can assimilate all the available space as it expands, while social activities move into separate, purpose designed spaces.

13.10 An eight form entry secondary school requires a wide range of facilities, and here the possibility exists to develop a new kind of community building or groups of buildings providing educational, social and perhaps welfare accommodation serving a population of about 15,000 (fig. 13.9). Those activities which require a wider population catchment would be best integrated with the technical or further education college, or at a regional level with the polytechnic. There would appear to be considerable scope in this approach to educational building in the context of new town development, and it is intended to develop these studies during the Master Plan stage. At this stage the allocation of areas for educational and social facilities is therefore provisional.

Open space and recreation

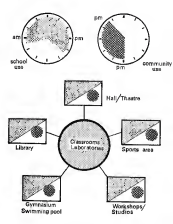
13.11 In setting appropriate standards for open space and recreational needs, the four trends mentioned in paragraph 13.1—increasing mobility, spending power, leisure time and population—exert their greatest pressure. We have therefore incorporated as far as possible all the natural landscape and existing parks in the area recommended for designation according to the standards shown in table 13.2.

Table 13.2 Recommended standards for public open space

Type of Public Open Space	Allowance in acres per 1,000 People
Regional Park	2
Major open space between townships	3
Roadside landscape	1½
Public Parks in town districts	2
Golf courses	½
Playing fields	3
Playgrounds	2

Township and city region space needs

13.12 According to the environmental objectives set out previously, and bearing in mind the need for a wide range of space standards to give variety of form and character to the new growth, we have assessed the space needs for a township on an average basis. These are theoretical and



13.9 Possible multiple use of secondary school facilities
A large secondary school has facilities which can be used for community purposes outside school hours, particularly during the early stages of the new town.

will vary in application depending upon such factors as the presence of existing development, relationship to large employment centres and the characteristics of the land form.

Table 13.3 Space needs for 60,000 township

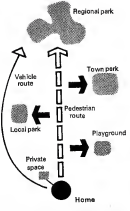
Housing at 35 p.p.a. net	1,715
20 two form entry primary schools	120
5 eight form entry secondary schools	150
Public open space at 9 acres per 1,000 pop.	540
Central area—retailing and parking	40
Offices and Public Buildings	12
Technical College	40
Manufacturing and service industry at 35 w.p.a. (including industrial estates and dispersed industrial sites)	563
Local facilities excluding retail	40
Roads and Verges	450
Total	3,570 acres

An allowance of 300 acres for broken land, wooded areas and natural features produces a total area of approximately 4,000 acres. This gives an overall township density of 15 p.p.a.

13.13 A new urban growth of this magnitude will produce large space needs on the scale of the total half million population. These needs could comprise such facilities as a city park, stadium, hospitals, major industrial sites, university or polytechnic. We do not envisage that the city should be a continuous built up area. A large and complex urban area on this scale must be able to provide opportunities for growth at the pace required, and capacity to adapt to new needs. Latitude may also be required to permit the successful integration of the existing with the new development. The degree to which existing facilities have surplus capacity or scope for expansion must also be taken into account. In total, therefore, it is difficult to be precise about the space needs for the unique city scale facilities and the amount of open space separation required between townships. The following table therefore is meant to serve as a guide based on the existing provision and likely standards of future need, rather than a definitive land allocation—

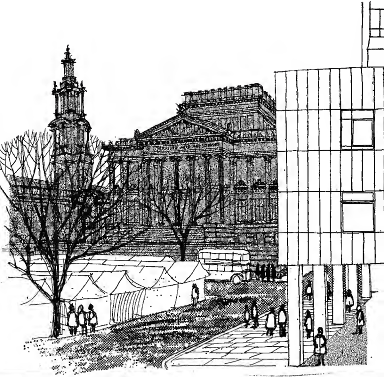
Table 13.4 Space needs for major 'one off' city functions

Regional parks and major open spaces	2,500
Stadium	40
Additional cultural and religious facilities	25
Regional hospital(s)	100
Cemeteries	150
Retail facilities and car parks	80
Major roads, public transport, filling stations and verges	1,000
Major industrial sites	300
Further education provision including playing fields	250
Total	4,445 acres



13.10 A sequence of open spaces linked to the city pedestrian system

At the city scale of development it is essential to achieve a continuity of readily accessible open spaces and recreational areas.



Preston town centre. In the middle the Harris Museum, on the left the County Sessions House, Crystal House on the right

Section fourteen

Role of existing communities

14.1 The rejuvenation of existing communities in the study area is essential to our concept of the new growth. The solution put forward must ensure the renewal of outworn parts, the expansion of existing towns—which if allowed to remain stable in a context of growth are likely to decline—and the extension of social and economic benefit to existing communities. The new urban structure of this area must therefore spring from existing patterns of physical development and social and economic relationship, rather than attempt to supplant them with something radically different and artificially self-contained. We have therefore accepted the potential for physical growth of the existing settlements, and their present individual character and mutual interaction, as the foundation on which future growth will be based.

14.2 Our analysis of the existing structure of economic and social functions in the study area (section 12), exposes some important relationships between the various towns. Preston acts as an administrative and communications centre serving a wide hinterland with its port, service industry and retail facilities. Leyland, with its flourishing manufacturing industry, is a male employment centre heavily dependent on surrounding towns for entertainment and retail services, and importing a great deal of labour from outside. Chorley is a largely self-sufficient entertainment and retail centre with an important market. Leyland appears to have the largest potential of the three to expand and to acquire new functions. Chorley is also suitable for expansion, to ensure that it can play its part in, and thus benefit from, the new structure, but care must be taken to preserve its character as a compact Lancashire town. Walton-le-Dale, Penwortham, Bamber Bridge, Whittle-le-Woods, Coppull and Euxton are all candidates for expansion in various degrees according to their different needs for better centres and more coherent structures.

Preston

14.3 The present structure of Preston will have to be considerably changed during the plan period. The central area will need to be enlarged and reorganised and other changes will follow the need for new and improved roads, and for new housing as existing property comes to the end of its useful life. At this stage it is difficult to estimate the land requirements of these changes and the effect they will have on the population—107,400 at present (1966). It is possible, however, that the population increase produced by the development of land already available within the County Borough boundary will be balanced by the loss in residential land to meet the needs of these new developments. The role of Preston as the largest single township unit, and the administrative, retail and service industry centre for the new city, therefore appears likely to preclude a significant population increase within its present administrative boundary over the plan period.

Chorley and Coppull

14.4 For Chorley (population 31,000) we suggest an expansion of about 20,000 to bring it up to the size of a minimum viable township. Most of this expansion could be accommodated in the very pleasant wooded land to the south of the existing built up area whose identity, given sympathetic expansion of the central area, need not suffer dramatic change. This expansion fills in the remaining areas of open space between Chorley and Coppull apart from the narrow valley of the River Yarrow. Expansion of Coppull to about 12,000 (population now 6,200) is possible to the north of the present community, allowing a population expansion of the order of 25,000 for the Chorley and Coppull part of the new development. This degree of expansion will round off these communities without encroaching on the vital gap of open country between the southern edge of the new city and the settlements to the south.

Chorley Market

Leyland

14.5 There is enough land available for development to the south and west of Leyland to take an expansion of population of about 50,000 in the plan period. This considerable increase in size will mean in effect the creation of a large new township of approximately 70,000 people expanding beyond the existing urban area. It should bring major new social and shopping facilities into this part of the growth area.

Other communities south of the Ribble

14.6 Euxton, a settlement of approximately 3,760 people lacks cohesion and identity. An expansion of the order of 4,000-6,000 population should create a more unified community and provide a satisfactory range of essential local facilities. The pleasant well-wooded land around Whittle-le-Woods to the north and west, contained by M6 and the route of M61, is suitable for low density residential development. Allowing for wide landscaped margins to the motorways and the preservation of the parkland around Cuerden Hall, a total population expansion of about 12,000 is possible making a total of 17,000. The area between Leyland and the Ribble embracing the communities of Penwortham, Tardy Gate, Bamber Bridge and Walton-le-Dale, needs long term restructuring and rehabilitation, particularly in the area around Tardy Gate. Straggling development served by a jumble of railways and roads and including much outworn property describes the present situation. The solution lies in an inevitably gradual process of re-organisation and improvement, in the course of which a controlled increase of some 20,000 people would be appropriate to make a total of about 63,000.

Fulwood

14.7 North of the Ribble, Fulwood with a present population of 18,300, is in effect a suburb of Preston with few facilities of its own. In the context of the future structure of the new city a greater degree of social independence in

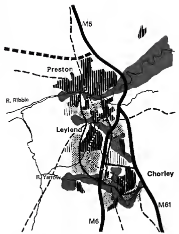
Leyland—industry dominates housing

terms of local facilities will be required. A substantial increase in population of at least 16,000 is indicated, and can be accommodated.

Total population of expanded communities

14.8 On this basis the total population accommodated by means of the expansion of existing centres would be of the order of 128,000, of which 112,000 is south of the Ribble. The total is just over half the projected total growth of 150,000 immigrants plus the 100,000 natural increase of new plus existing population. This leaves us with a balance of 122,000—the equivalent of two townships—to be accommodated in 'green field' developments.

14.9 Fig 14.1 shows diagrammatically the disposition on the map of the population growth we have suggested south of the Ribble, with possible routes indicated for the urban motorways and fast public transport system linking the expanded communities to each other and to Preston. Although a dispersed pattern of this kind offers the possibility of simultaneous growth at many points and thus a high total construction output, it is clear that rates of expansion will very considerably from place to place. The pace of development south of Chorley, for instance, must not be so great as to outstrip the necessary redevelopment of the town centre which is bound to be a slow process. The growth of Leyland, on the other hand, will be able to proceed without this kind of restriction since the new township will require a brand new centre which may well lie outside the present urban area altogether. The aim in each case must be to adjust the rate of growth, and the sequence and type of development, to the needs of each community so that it can gain the benefits of rapid integration into the new city structure without damage to the good parts of its existing character and environment. We hope to present in the Master Plan Report proposals for the programming of the operation which will satisfy criteria of this kind.



14.1 Proposed expansion of existing communities south of the Ribble
112,000 new population can be accommodated by the expansion of existing communities south of the Ribble.

Longridge Fell from the east. Wolf Fell, on the southern edge of the Forest of Bowland, appears on the right

Possible directions of new development

15.1 The proposed expansion of existing communities accommodates 128,000 of the projected total increase of 250,000 people by 1991—112,000 south of the Ribble and 16,000 to the north—leaving a balance of 122,000. New development is therefore needed which should ideally be in the form of two new townships each of approximately 60,000 population. This is a theoretical concept, of course, which would have to be modified in practice to take account of the physical characteristics of the chosen sites, relevant economic and transportation factors, the major city scale functions allocated, and relationships to other new and existing townships. It is sufficient however, for a preliminary search, to define the site requirements for new development as two rectangular areas of land whose dimensions are of the order of 3½ miles long and 2 miles wide with the main transportation linkages at the short ends (cp figs. 12.11 and 12.12).

15.2 As we showed in fig. 8.2 the main restrictions to development north of the Ribble are high grade agricultural land and areas of outstanding natural beauty. There is still, however, scope within these inhibitions—considerably so to the north and east of Preston, but more restricted to the west by the proximity of the fertile Fylde. Additional possibilities south of the Ribble are limited to the area east of M61 around Hoghton since the white land south of Leyland is already taken up as far as we believe it should be in our proposals for the expansion of the existing town.

15.3 On the assumption that neither of the two new townships should be isolated from the rest of the development, or be sited where it would unduly strain communication and service lines, ten possible options emerge. All ten have a common base in the expansion pattern for existing communities which we have described in Section 14. The ten options are identified in fig. 15.1. The performance of each option can be assessed in relation to nine criteria—

(a) The degree of linearity of the urban structure and following from this the extent to which the transportation network is subject to major changes of direction or junctions of flow.

(b) The amount of encroachment on high quality agricultural land.

(c) The extent of opportunities for the rapid creation of a high quality of environment.

(d) The extent of attractions for new investment (e.g. large, flat, highly accessible and well serviced sites for industry).

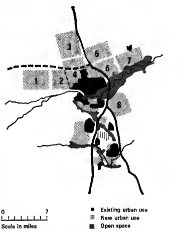
(e) The use of spare capacity in existing investment with particular regard to communications.

(f) The effect on surrounding areas.

(g) The degree of conflict with local interests.

(h) The possibility of rapid implementation.

(i) The presence of opportunities for further growth.

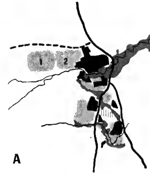


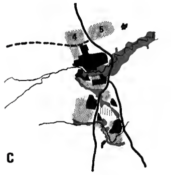
15.1 Possible direction of new development
In addition to the expansion of existing communities two new 60,000 townships are required to accommodate the balance of the new population. There are ten options to choose from—

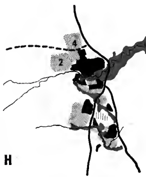
Option	Location of townships	
A	1	2
B	3	4
C	4	5
D	6	7
E	2	8
F	4	8
G	6	8
H	2	4
I	2	6
J	4	6

Not all of these criteria carry the same weight and in many cases fulfilment of them is a matter of degree. The balance of assessment for any given option may still be very much a matter of opinion based on knowledge and experience. We therefore look on the use of this kind of rationale more as a guide to decision making than a substitute for judgement.

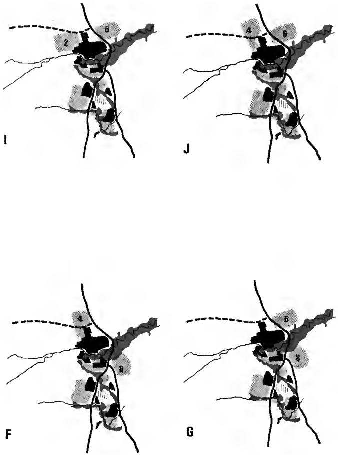
15.4 It is possible to eliminate some options at a first evaluation because they completely fail to satisfy one or more of the key criteria. Option A, for instance, severely encroaches on the best quality agricultural land of the Fylde, and growth in this direction carries the risk of coalescence in due course with Blackpool (fig. 15.2). Options C, H, I and J involve a significant departure from a linear form of growth and imply major branching or abrupt changes of direction in the city transportation system. This produces severe intersection problems which would reduce the capacity of the network and increase its cost for both public and private transport. An additional disadvantage present in Option C is that it points development towards an area of outstanding natural beauty. Similar communication difficulties are present in Options F, G and E. In the case of Option E, however, the opportunity exists to make good use of the existing transport facilities and this option is therefore worth retaining for further examination. As a result of this first evaluation, Options E, B and D emerge as worthy of further consideration.







15.2 Options A, C and H



15.3 Options I, J, F and G

15.5 For the next stage of testing we developed sketch urban structures for the three surviving options (figs. 15.4, 5 and 6). These are not so much miniature master plans as studies of the feasibility of each option on the ground by means of more detailed site inspections, and a trial allocation of land use to indicate—

(a) The distribution of major industry. The likely number of employment places was projected for each industrial area.

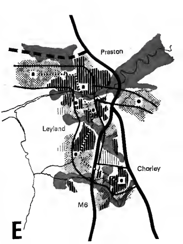
(b) The position of enlarged and new central areas. Again the total employment likely to be provided was projected.

(c) The existing and new areas of mainly residential use showing the number of people likely to be accommodated and the employment opportunities likely to be present in each housing area.

(d) The main public open spaces.

(e) The main lines of the public and private transportation network.

Each structure was planned to fulfil the same standards which we have set out in Section 13, the social, environmental, economic and transportation needs of the new and existing development being taken together. Having developed each option to a sufficient degree to ensure its workability and also to enable the transportation system to be tested (paragraph 15.9), we examined them more closely in relation to the nine criteria described in paragraph 15.3. What follows is a shorthand account of the main points that emerged.



15.4 Option E

0 1 2 3 4 5 6 miles

KEY

▮▮▮	Existing urban use
░	New urban use
‖‖‖	Special ownerships
■	Open space and landscape features
●	Town centre
—	High speed road
········	Public transport route

Option E

15.6

Advantages:

Attractive to industry; a good relationship to Preston Docks and a large existing industrial concentration (U.K.A.E.A. at Salwick).

Good rail and road facilities.

Best opportunity for making use of existing transportation investment.

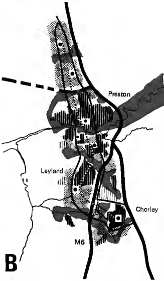
Good potential for quick implementation as both townships could be developed simultaneously.

Disadvantages:

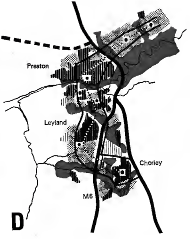
Eastern township (8) departs from linear form and is also sited on very difficult terrain. No further growth possible in this direction.

Further growth westwards prevented by valuable agricultural land which is already encroached upon at the western extremity of the north-west township, (2). Regarded by local and national agricultural interests as no less of a serious threat to the Fylde than Option A.

Minor environmental factors—pylons, power lines, flight paths, sewage works, etc.—may mar the ultimate environmental quality of the north-west township.



15.5 Option B



15.6 Option D

Option B

16.7

Advantages:

Good linear structure.

Attractive to new investment, with good sites for industry and considerable capacity for expansion.

Spare capacity on a major existing road (A6).

Further growth possible northwards.

Disadvantages:

Northern township (3) encroaches on valuable agricultural land.

A detailed survey indicated that more extensive areas of peat and alluvium were present on the site of this township than was first thought.

The low lying Wyre drainage basin is already suffering from flooding and would require extensive storm water retention schemes to cope with new development.

Option D

15.8

Advantages:

Good linear structure.

Potential for creation of environmental quality superior to any other option with very great potential for recreational facilities.

Existence of major industry (Courtaulds) and new industrial estate on the east side of M6.

Good relationship to national motorway system; possibility of integrating future communication lines eastwards.

Relates best to the summary of physical restraints (Section 8 and figs. 8.1 and 8.2).

No major problems of foul drainage or surface water disposal.

Good possibilities for future growth.

Disadvantages:

Attractiveness to industry would decrease if sites were placed too far from M6.

Lack of existing major communications.

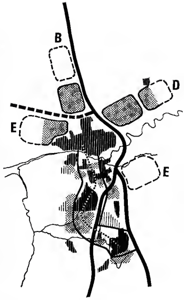
15.9 We obtained the traffic flows on the highway network for each of the three options so that the need for particular major and minor roads could be determined. We compared the new highway provision for the different options and they all appeared in general to have an economic communications system. The differences between them lay in their use of existing highway facilities and in the degree of linearity. We also analysed options B and D to calculate their public transport patronage by rail, express bus and local bus. We considered the difference in future attractiveness between an express bus and a suburban rail service to be minimal. The existing suburban rail service between Blackpool and Manchester would, however, only be completely used for express public transport in a westward option, and therefore in neither of the two options tested was it possible to rely only on the railway for express public transport services. We undertook a quantified analysis of public transport patronage for these two structures and found no significant difference between them.

The choice

15.10 From this process of developing and testing the three options it became apparent that parts of all of them suffered from certain major disadvantages. Option E compared unfavourably on communication grounds because the disposition of the south-eastern township (8) within the overall structure required long lines of communication and produced difficult and expensive intersection problems. A detailed investigation of the site of this township showed that the uneven terrain would severely limit the choice of sites for industrial estates and lead to additional construction costs. There are no possibilities for future growth and part of the north-west township (2) is on high value agricultural land. The northern township of Option B (3) has to be moved much further northwards if it is to avoid the good agricultural land and the peat measures. This would result in an excessively attenuated linear form with a very large gap between the townships, expensive communications, and the strong possibility that the northern township (3) would tend to become functionally detached from the rest of the urban structure and thus economically and socially isolated and weak. The extreme eastern part of Option D beyond Longridge might be less attractive to industrialists, because of its distance from M6.

15.11 Fig. 15.7 shows the result of plotting these prohibitions on the map—the shaded areas represent the parts of each option which remain in the clear and available for unrestricted development. It is evident that Options E and B must yield to D as the favourite with fewest major disadvantages as well as the best supporting case. This then, modified to shorten its eastward extension, becomes our preferred structure (fig. 15.8).

15.12 We must emphasize that fig. 15.8 is not an anticipation of the Master Plan. It is no more than a feasibility study to test the land use and transportation structure of the modified option D sufficiently for us to be able to use it with confidence as a basis for the proposed area to be designated. The Master Plan proper may well turn out to



15.7 Evaluation of selected options
The shaded parts of the townships in each option represent the areas most suitable for development.

be different. The changes we have made to the original option redistribute the population in the two new townships from about 60,000 each to 37,000 for the one furthest to the east and 75,000 for the one nearest to Preston. The unequal township populations reflect the concentration of employment areas in the west and the opportunities for residential areas of superb environmental quality in the east. This leaves a balance of 10,000 people which we propose to accommodate as additional expansion to the 16,000 people we have already suggested for Fulwood (para. 14.7). Our provisional view is that this substantial increase should be concentrated largely in the north-west of Preston so as to occupy some of the Option E township land which is still available here, and can enjoy all the advantages of this option without taking up any of the area which we have had to exclude. Table 15.1 summarises the population distribution in the preferred urban structure, and brings together both the proposals for the expansion of existing communities and the plans for new development which are discussed above.

15.13 To summarise then, the attributes of our choice are as follows. It uses a minimum of high quality farmland; it has a good linear structure; it has ample sites of the right kind for major industrial growth; it avoids all the physical inhibitions that we have discovered and presents no obstacles to a rapid rate of construction; it offers excellent possibilities for rapid access to the regional and national road and rail systems; it presents no abnormal water supply or drainage problems; and it provides the possibility of achieving the best and most exciting environment for twenty-first century living, with superb facilities for outdoor recreation of all kinds, in the whole of our study area. The only disadvantage that we can discover is the present lack of major road and rail facilities north-east of Preston. In relation to the size of the enterprise as a whole we judge this to be eclipsed by the remarkable advantages of this proposition in every other respect.

Possibilities for future growth

15.14 In considering the regional context of the new town, we have emphasized that the danger of future coalescence with Wigan, Skelmersdale and the larger urban areas to the south must be avoided at all cost. It is almost impossible to foresee the trends or needs of city growth after 1991, but, assuming the principle of separation from the existing built-up areas to the south is still valid at that time, and that a continuation of the linear structure is the most economical form for additional growth, the northern part of the preferred structure should be capable of major extension. With the chosen option this could be done in one of three possible ways—by continuing growth along the south facing slopes of the Ribble Valley, by curving eastwards across the Ribble towards Blackburn, or by swinging north-west back towards M6. The relative merits of these three possibilities will not be clear for many years and it is thus essential that the Master Plan should be designed, as far as this part of the new city is concerned, in such a way that the choice can be left open for as long as possible. This is what we intend to do.

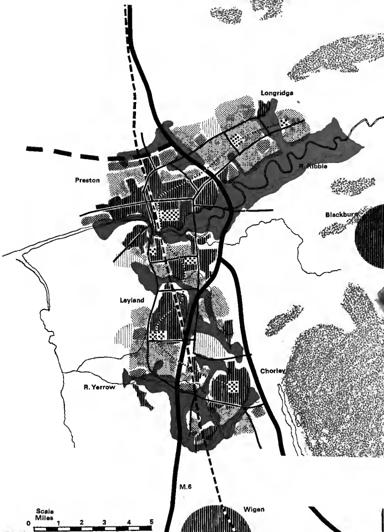
Table 15.1 Population distribution within the area proposed for designation

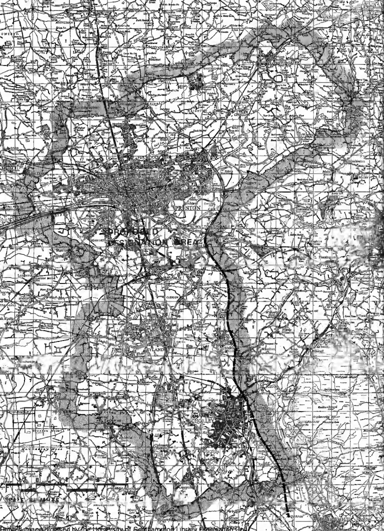
	Existing Population (1966 Estimates)	New Population	Total
Preston	107,400	—	107,400
Chorley/Coppull	37,200	25,000	52,200
Leyland	21,500	50,000	71,500
Euxton	3,760	5,000	8,760
Whittle-le-Woods/Cuerdon	5,150	12,000	17,160
Communities to the south of Preston	43,600	20,000	63,600
Fulwood	18,300	26,000	44,300
Other Communities north of the Ribble and minor scattered settlements	16,090	112,000	128,090
Total	253,000	250,000	503,000

15.8 The Preferred option

KEY

▥	Existing urban area
▒	General residential area
▓	Industrial area
⁙	Town centre
⦀	Special ownerships
■	Open space and landscape features
▩	Land over 600 feet
——	High speed road
▬ ▬ ▬	Railway
············	Public transport route


Longridge
R. Ribble
Preston
Blackburn
Leyland
Chorley
R. Yerrow
M.6
Wigan
Scale
Miles
0
1
2
3
4
5


PRESTON
PROPOSED
DESIGNATION AREA
WALTON-LE-DALE
LEYLAND
CHORLEY
WHITTINGHAM

Designation proposals

16.1 The area recommended for designation follows from the process of choice described in the previous section. It is shown in fig. 16.1 and totals approximately 51,460 acres. It extends in a broad sweep from Longridge in the north-east, through Preston to Chorley, and is bisected by the River Ribble. Contained within it are the whole of the County Borough of Preston and the Urban District of Fulwood, Chorley Municipal Borough apart from a small area lying to the east of the route of M61, the greater part of Leyland, Walton-le-Dale and Longridge Urban Districts, and substantial parts of Preston and Chorley Rural Districts.

16.2 A sizeable proportion of this total area is accounted for by penetrations of open space between the major parts of the development. It is our view that a new city of this magnitude should not be built as an unbroken expanse of urban development. The nature of the urban structure we have put forward based on the linear articulation of viable units of growth and, in particular, the township concept, has its essential corollary in the clear separation of townships by considerable areas of open space. It should be possible for the peripheral areas of these major open spaces to remain in agricultural use, but for the main part they will provide excellent opportunity for the creation of large town parks. In two cases we have made additional use of this kind of open space to create acoustic and visual barriers between new urban areas and an existing motorway.

16.3 Some of the land included within the proposed designation area is for various reasons not suitable for development. One such area is the flood plain with its bounding escarpments on both sides of the Ribble east of Preston. This has been included to preserve its outstanding amenity value for the large new development which will take place on the south facing slopes overlooking the valley from the north. This open space penetrates into the heart of Preston and gives unequalled opportunity for the creation of a superb and readily accessible ~~car~~ city park, leading from the core of the urban area, along the winding course of the Ribble, and out into the open countryside beyond Ribchester. Other scattered areas on which building cannot take place are those subject to restrictions of the kind mentioned in paragraph 8.2, the whole adding up to approximately 7,500 acres.

16.4 Leaving out the 7,500 acres unsuitable for development, the designated area will provide for a 1991 population of 503,000. This gives a gross density of 11.4 persons per acre.

16.1 The area proposed for designation
The route of the M61 is shown by the broken line.

The boundary

16.5 Wherever possible the proposed boundary follows easily definable features such as motorways, roads, railways, rivers, streams and water courses. Where marked physical features of this kind are absent, we have followed alternative lines such as administrative boundaries. We have done our best to reduce the severance of farm units to the minimum. What follows is a step by step description of the proposed boundary line, starting at the Ribble west of Preston.

River Ribble: north and east to M6

16.6 From the River Ribble, the proposed boundary runs in a north easterly direction, picking up the Lea and Newton-with-Clifton parish boundary, the Savick Brook, Sidgreaves Lane, part of the Lancaster Canal and Sandy Lane. Rounding Lower Bartle the boundary coincides with Woodplumpton Brook up to A6 where it follows the centre line of the motorway spur and M6 as far north as Whittingham Lane.

M6 north eastwards to Longridge

16.7 The boundary line follows Whittingham Lane, Camforth Hall Lane and cuts across along a footpath to Ashley Lane. It proceeds along Ashley Lane, turns south down a stream to Cumaragh Lane, which it follows to Halfpenny Lane. It then returns via Higher Lane, New Lane and the Longridge Urban District boundary to the north-east end of the Longridge reservoirs.

Longridge: south and west to M6

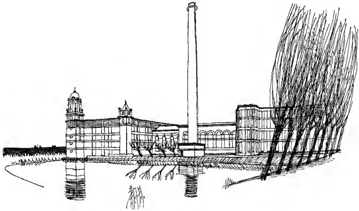
16.8 The line next turns south-east along Writtan Stone Lane, Ward Green Lane and The Roman Road (B6245). Before reaching Ribchester there is a change of direction south-westwards on the line of a stream to the Ribble opposite Osbaldestone Hall. After turning upstream for several hundred yards it swings due south and runs south-west following Wilcock Brook, Bessa Brook and various farm boundaries to Potter Lane. M6 is reached by way of Potters Lane and Preston New Road.

M6 south and west to Coppull

18.9 From M6 at Preston New Road to Nick Hiltons Lane south of Chorley, the designation boundary follows first the centre line of M6 to Walton-le-Dale and then the centre line of the proposed M61. From Nick Hiltons Lane, Babylon Lane and the Chorley Rural District Boundary as far as the Chorley - Manchester railway, where it takes the line of a disused railway line to Ellerbeck Brook. The M6 west of Coppull is reached via the River Yarrow Green Lane, Coppull Moor and various footpaths and farm boundaries.

Coppull: west and north to the River Ribble

16.10 The proposed designation boundary follows the centre line of M6 northwards to New Park cottage, and turning west picks up Hodge Brook which is followed to the Yarrow. The boundary then coincides with the Yarrow approximately two thirds of a mile downstream from Eccleston, where the Eccleston parish boundary is followed up to Barbers Moor Lane. The lane is crossed to the River Lostock and the line continues due north to the old Ministry of Defence site at Ulnes Walton, and coincides with its eastern boundary as far as the Wymott Brook. Following the brook north-east, the lane meets Long Meanygate and proceeds along the lane skirting the agriculturally valuable land of Leyland Moss to the south, and Farington Moss to the east, meeting the Preston-Ormskirk railway. The boundary then coincides with part of this railway and follows several lanes including Chain House Lane, part of the Preston-Southport railway and Mill Brook to the Ribble, at the point where this description began.



Coppull Mill

Section seventeen

The adjoining areas

17.1 The rapid development of a very large new town will inevitably produce pressures for change on the surrounding villages and countryside. Some areas which are now entirely rural and poorly served by communication routes will have an urban neighbour with new high speed roads and excellent accessibility. There will be pressure for housing development in the villages and outlying settlements and for recreation facilities in the surrounding countryside, as well as for electricity and gas lines and mineral extraction. In some instances these pressures will constitute a threat to productive farming and market garden units on the fringe of the new town.

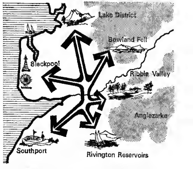
Conservation

17.2 The boundary of the proposed designated area will be clearly defined in some parts—particularly for instance where it follows the line of M6 and M61. In other parts, to the south and west for instance, no clear natural or man-made boundary is available. We have taken care to avoid the best quality agricultural areas but at some points the edge of the designated area runs close to such land. Where this situation occurs and where the boundaries follow such natural features as the Ribble Valley, thus making urban development nearby undesirable, we envisage a buffer zone of open space. This can be landscaped so as to improve the transition from urban to non-urban character and to maintain continuity with other open space penetrating the urban area. It is essential in our view to preserve the concept of a clear transition between urban and non-urban development. In settlements outside but near to the designation line new development should be limited to infilling and rounding off. Detailed examination may indicate critical points where no new development at all should be permitted. Any development which takes place must be of good quality. There is scope for the rehabilitation or renewal of villages to preserve and improve their existing character. These matters are, of course, primarily the concern of the local planning authority. We suggest that a conservation policy should be established along these lines in advance of the building of the new town, so that the pressures it will produce can be dealt with as they arise. Such a policy should cover the whole rural hinterland.

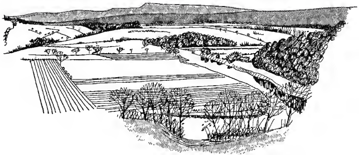
17.3 The areas of very good landscape in central Lancashire and the coastal towns will probably bear the brunt of new demand for recreation. The balance between the preservation of wild landscape and its use for outdoor recreation requires careful examination by the planning authority and other bodies concerned. The coastal towns will benefit from the increased recreation demand arising from the new town, but here again planning and highway policies may need revision in the light of the new growth (fig. 17.1).

Allocation of land for growth

17.4 Land should be safeguarded for the further growth that may be expected after the planned immigration of 150,000 people is complete. It must be possible for the new town to obtain land to provide at least for its own natural increase after the end of the plan period, since land for this eventual need is not included within the area proposed for designation. It is not possible at this stage to add to the very broad indication of possible directions of growth outlined in Section 15. In principle, however, it is obviously desirable to leave as much scope as possible for the forms and directions this expansion could take, and this is in accord with the recommended policy for preservation of the rural areas around the proposed area for designation.



17.1 Readily available recreational and leisure facilities
The new city will be particularly fortunate in the wide range of recreational and leisure facilities within easy reach. The Peak District, the Lake District and the Yorkshire Dales National Parks are all within reach.

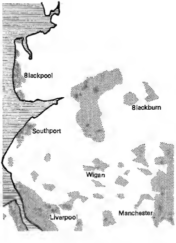


Ribble Valley, looking north towards Longridge, five miles east of the centre of Preston

Conclusion

18.1 We conclude that the area proposed to us for study is well chosen for a large urban development, able to receive an immigrant population of some 150,000, and capable of growth to a complex of around half a million people. The development is feasible in terms of the industrial and commercial growth that it will entail, and it is our view that the project will be economically viable. The inflow of enterprises that will be required has been examined in detail and while it will pose some problems we think they can be overcome, and that this area is the best available for the purpose. The designation area recommended in this report is in our opinion very suitable for housing to high standards, for industry, commerce and communications. It lends itself to the development of an urban complex of linked townships with a major city centre, and this, in our view, is the best way of meeting the future needs of the people in the area, their means of livelihood and their living conditions.

18.2 As regards the whole of north-central Lancashire and its future, we are convinced that much the most effective way of reviving and modernising it is by means of a really major development such as this, at the most favourable strategic point in the region. The success of such a project should benefit the whole surrounding area by bringing to it the amenities and facilities of a large new centre, as well as new industrial activity by linkage with the incoming enterprises. It will indeed provide a third city grouping for the North West Region, not as big as the conurbations of Manchester and Liverpool, but big enough to provide the best features of large cities, and to become in time a counterbalance to the densely populated and congested sprawl of South Lancashire (fig. 18.1). The splendid opportunities presented by the Central Lancashire project for the creation of a new city with the highest standards of environment and accessibility, allied to its potential for vigorous economic growth, should combine to produce a new image for the North West, powerful and attractive enough to redress the present regional imbalance of population and prosperity.



18.1 The area proposed for designation in its regional context

A third city for the North-West.

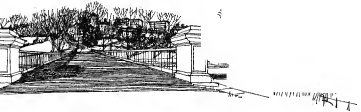
Preston from the south looking across the Ribble to Avenham Park

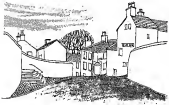
Appendices

A Terms of reference page 95

B National land classification—description of grades 98

C Authorities consulted 99





Chipping Village—buildings tightly grouped on sloping streets

Chipping Village. The vernacular architecture of the Bowland foothills—stone, slates and black and white paint

Appendix A

Terms of reference

Preamble

1. The North-West Region needs further economic growth to create the prosperity which will halt the drift of population to more fortunate parts of the country and to assist in eradicating the ugliness and obsolescence of much of its environment which lies at the root of the Region's problems.

2. In the past, the development of new industries and commerce has led to the continued sprawl of development in south Lancashire. The densely populated areas around Manchester and Liverpool have been natural magnets for new development, and population and industry have been reluctant to leave the highly developed transport network and the shopping and commercial facilities of the conurbations. This has caused increasing congestion, the green belt has receded and the quality of the environment deteriorated.

3. It is now thought possible to introduce a planned focus of growth further north where it can contribute towards the creation of a well-balanced and attractive environment instead of aggravating the problems of the region. This concept therefore is regional in character—it seeks to redress a regional imbalance in the pattern of growth and prosperity.

4. Situated in the heart of the north-west of England, it is sufficiently distant from south-east Lancashire and Merseyside to make it possible to have large scale development without coalescence and sprawl, yet, with its rapidly improving communications, it is within easy reach of the highly specialised facilities and trades possessed by the largest cities. The area has a reasonable climate and a pleasant countryside and is close to seaside resorts, the Lake District and the Pennines. It has already shown healthy signs of growth in housing and industry, largely as a result of private investment, and even allowing for a continuation of these trends, sufficient land for further large scale development will still be available.

5. The area has a port in Preston and access to major airports at a distance of about 40 miles. Preston's importance as a railway centre may be enhanced by the present scheme of rationalisation. The building of the M6 has greatly improved communications to the north and south and the area is located at the confluence of existing and proposed motorways, which will extend to Carlisle and Scotland in the north; Manchester, the Midlands and London to the south; Liverpool and the Irish Sea ports in the west; and east Lancashire and Yorkshire in the east.

6. This type of development will provide an opportunity to rationalise the transport and land use patterns of the area and the creative use of new development to modernise and upgrade the region is an essential part of these proposals.

A. General

The two stages:

7. The consultants are required by the Minister to carry out a two stage study:

Stage I to advise the Minister on the area to be designated for development under the New Towns Act;

Stage II to produce for the Development Corporation (when it is set up) a draft master plan.

Timing of stages:

8. The report on Stage I (Designation) will be submitted to the Minister not later than 31st January 1967. The report on Stage II (Master Plan) will be submitted to the Development Corporation not later than 30th April 1968.

Purpose of the development:

9. The purpose of the development is—

(i) to form a "growth" zone in this part of Lancashire which will help towards the social and economic well-being of the region as a whole, contributing to its industrial revival and the renewal of the older towns;

(ii) initially to provide for some of the housing and other development needs of the south-east Lancashire conurbation and other congested areas.

Previous work:

10. The consultants are to inform themselves of the work already carried out by the North West Economic Planning Council and Board and the local planning authorities (i.e. the Lancashire County Council and the Preston County Borough Council) towards assessing the development potential of central Lancashire.

Size:

11. The provisional size of population in mind for the development is 150,000 additional to what is there now and growth by natural increase. The consultants will be free to advise on whether this is the right size of population to provide for in this area.

B. Matters relating primarily to the designation report

Area of Study:

12. The area for designation is to fall within an "area of study" broadly defined as the area bounded by agricultural belts on the north and west, by the hills and moors on the east and by the Wigan coalfield on the south.

Content of Study:

13. A striking feature of the development will be its location within an area already containing a large popula-

tion and several large towns. Since the Government's intention is to create an area of growth and of benefit to the surrounding areas, the consultants will need to consider where, within the area of study, growth can best be stimulated and development most suitably take place. It will be necessary to examine the relationship of the area of study to the wider region, to assess the development potential of the various parts of the area of study and to consider for what form of development, if any, these parts may be best suited. Account must be taken of the function, structure, requirements and potential of existing towns. If special studies going beyond the terms of this commission are found to be necessary, the Department is to be advised on what these should be.

Urban Renewal:

14. The extent to which provision should be made for housing people from neighbouring towns both within and outside the area of study as these are renewed, will need to be examined in close consultation with the local authorities concerned. The rehabilitation of derelict areas should also be considered.

Flexibility:

15. It will be important to achieve flexibility in the use of land for development to take account not only of changes in circumstances and regional pressures, but also of the possibility of growth beyond the initial planned population (not necessarily within the designated area).

Limiting Factors:

16. In proposing areas for designation the consultants will need to take into account such matters as:

(a) the relative agricultural values of land;
(b) existing amenity and landscape values;
(c) the presence of any workable minerals;
(d) stability of the site and the presence of any mine shafts and workings.

Designation Report:

17. The designation report (Stage I) should show the area considered desirable for development and should set out fully the considerations leading to this choice.

C. Matters relating primarily to the Master Plan

Physical structure:

18. The development areas proposed should have a coherent structure which can be easily appreciated by those who live in and visit them and an appropriate urban character should be aimed at. They should fit into the regional landscape and the limits of building development should be defined to achieve a clear contrast between town and countryside and avoid sprawl. The new developments should be carefully related to what is there now and their physical relationship with it will be of the greatest importance.

Traffic, Transport and Land Use:

19. The design of the communication system must have regard to a high level of car ownership and use. But consideration must also be given to the integration of all forms of transport. With population growth, traffic problems and particularly the relative importance of public transport, will increase substantially. A form of urban structure is, therefore, needed which relates growing traffic to growing development in such a way that the capacity of the traffic facilities can maintain an acceptable level at all stages without over-provision and within reasonable investment limits. Consideration should be given to the possibility of a change in emphasis from private to public transport as the development grows.

20. There must be maximum segregation of vehicles and pedestrians throughout the main urban areas and the development should be based on a series of environmental areas from which through traffic is excluded.

21. The consultants are required to examine the possibility of locating industrial, residential and other areas in such a manner as to achieve an adequate distribution of various kinds of use and a balance of peak traffic flows.

Time Scale:

22. Though no precise, fixed time can be set for the completion of developments on this scale (which may well spread over two decades), it is important to achieve the maximum possible rate of building and population growth consistent with social integration.

Programming:

23. It is essential that building should be possible in reasonably self-contained and complete stages enabling each to become socially established in the shortest time possible.

24. The consultants are required to consider and make proposals for:

(a) Ensuring sufficient continuity of responsibility to make the transition from plan to execution effective.
(b) Reducing the gap to the minimum between approval of the master plan and the start of large scale work on the site including the extent to which construction in the early stages should be by way of system building.
(c) Mobilising for this work the widest possible range and variety of design skills.

Feasibility Studies:

25. In advance of completion of the master plan the consultants are required, in consultation with the Department, to select suitable pilot development projects and

begin design work on them at an early stage in relation to the main initial development areas.

Costs:

26. The report on the master plan should contain estimates of costs of the plan phased according to its provisional programme.

Development Control:

27. Appropriate arrangements will be made between the Ministry and the local planning authorities to ensure that development and highway proposals which might prejudice future development can be considered and decided in the light of the consultants' comments and recommendations.

D. Industrial research project

28. The consultants will need to examine the existing economic structure and resources of the area of study. In addition to this, however, the Government may wish to use this project as a basis for research into whether, by introducing particular new industrial activities, it would be possible to complement those already in the area and so help to obtain a more rapid rate of economic growth in the area than would otherwise occur. It will be necessary to discuss this question in further detail with the consultants and to consider how the work is to be done.

E. Other matters

Liaison Committee:

29. The Ministry, in consultation with the Lancashire County Council and Preston County Borough Council and such Government Departments as the Ministry think fit, will establish a technical liaison committee to assist the consultants in such matters as access to relevant survey data and other information.

Access to information:

30. The Consultants would be free to make whatever use they may wish of all factual information collected by them in the course of the Study, subject, of course, to any restrictions imposed by the body supplying the information. Subject to the same proviso, the Department (or the Development Corporation), the Lancashire County Council the Preston County Borough Council and any other Councils (in relation to their interests) will have free access after completion of the Study, to all such information and be free to make whatever use they may wish of it.

Appendix B

National land classification

Description of grades

Grade I

Land with very minor physical limitations to agricultural use. The soils are deep, well-drained loams, sandy loams, silt loams or peat, lying on level sites or gentle slopes and are easily cultivated. They retain good reserves of available water, either because of storage properties of the soil or because of the presence of a water table within reach of roots, and are either well supplied with plant nutrients or highly responsive to fertilisers. No climate factor restricts their agricultural use to any major extent.

Yields are consistently high on these soils and cropping highly flexible since most crops can be grown, including the more exacting horticultural crops.

Grade II

Land with some minor limitations which exclude it from Grade I. Such limitations are frequently connected with the soil—for example, its texture, depth or drainage, though minor climatic or site restrictions, such as exposure or slope, may also cause land to be included in this grade.

These limitations may hinder cultivation or harvesting of crops, lead to lower yields or make the land rather less flexible than that in Grade I. However, a very wide range of agricultural and horticultural crops can usually be grown, though there may be restrictions on the range of horticultural crops and arable root crops on some types of land in this grade.

Grade III

Land of average quality, with limitations due to the soil, relief or climate, or some combination of these factors which restrict the choice of crops, timing of cultivations, or level of yield. Soil defects may be of structure, texture, drainage, depth, stoniness or water-holding capacity. Other defects, such as altitude, slope or rainfall, may also be limiting factors; for example, land over 400 ft. which has more than 40 ins. annual rainfall (45 ins. in North-West England, Western Wales and the West Country) or land with a high proportion of moderately steep slopes (1 in 8 to 1 in 5) will generally not be graded above III.

The range of cropping is comparatively restricted on land in this grade. Only the less demanding horticultural crops can be grown and, towards the bottom of the grade, arable root crops are limited to forage crops. Grass and cereals are thus the principal crops and the land is capable of giving reasonable yields when judiciously managed and fertilised. In fact, some of the best quality permanent grassland may be placed in this grade, where the physical characteristics of the land make arable cropping inadvisable.

Grade IV

Land with severe limitations due to adverse soil, relief or climate, or a combination of these. Adverse soil characteristics include unsuitable texture, structure, wetness, shallow depth, stoniness or low water-holding capacity. Relief and climatic restrictions may include steep slopes, short growing season, high rainfall or exposure. For example, land over 600 ft. which has over 50 ins. annual rainfall or land with a high proportion of steep slopes (between 1 in 5 and 1 in 3) will generally not be graded above IV.

Land in this grade is generally only suitable for low output enterprises. A high proportion of it will be under grass, with occasional fields of oats, barley or forage crops.

Grade V

Land of little agricultural value with very severe limitations due to adverse soil, relief or climate, or a combination of these. The main limitations include very steep slopes, excessive rainfall and exposure, poor to very poor drainage, shallow depth of soil, excessive stoniness, low water-holding capacity and severe plant nutrient deficiencies or toxicities. Land over 1,000 ft. which has more than 60 ins. annual rainfall or land with a high proportion of very steep slopes (greater than 1 in 3) will generally not be graded above V.

Grade V land is generally under grass or rough grazing, except for occasional pioneer forage crops.

Appendix C

Authorities consulted

Adlington U.D.
Air Traffic Control Centre, Barton Hall
Blackburn C.B.
Blackburn District Churches Interdenominational Committee
Blackburn R.D.
Blackpool Airport
Board of Trade
British Rail
British Road Services
British Waterways
Building Research Station of the Ministry of Technology
Central Electricity Generating Board (London and Altrincham)
Charles J. Lomax and Son, Manchester
Chorley M.B.
Chorley R.D.
Civic Trust for the North West
Council for the Preservation of Rural England (London and Preston)
Denton Clarke and Company, Chester
Department of Economic Affairs (London and Manchester)
Department of Education and Science
English Industrial Estates Corporation, Gateshead
Forestry Commission
Fulwood U.D.
Fylde Water Board
General Post Office (N.W. Region)
Harris College, Preston
Home Office
Howarth, Wickman and Buchele, Chester
Imperial Chemical Industries, Northwich
Lancashire County Council
Lancashire Naturalists Trust Limited
Lancashire River Authority
Land use Survey, Kings College, University of London
Leyland U.D.
Liverpool Airport
Longridge U.D.
Manchester Airport
Manchester C.B.
Manchester Regional Hospital Board
Meteorological Office
Ministry of Agriculture, Fisheries and Food
Ministry of Aviation
Ministry of Defence
Ministry of Housing and Local Government (London, Manchester and Newcastle)
Ministry of Labour
Ministry of Power—Petroleum Division
Ministry of Technology
Ministry of Transport
National Coal Board (Opencast Executive and North West Division)
Nature Conservancy
North West Economic Planning Council
North West Economic Planning Board
North Western Electricity Board (Manchester and Preston)
North Western Gas Board
Pencol Engineering Consultants
Preston C.B.
Preston and District Water Board
Preston Docks Manager
Preston Observatories
Preston R.D.
Registrar General
Royal College of Advanced Technology, Salford, Department of Liberal Studies
Salford C.B.
Shell-Mex and B.P., Manchester
Skelmersdale Development Corporation
Soil Survey of England and Wales, Harpenden
Stonyhurst College
United Kingdom Atomic Energy Authority
Walton-le-Dale U.D.
Warren Springs Laboratory, Stevenage
Water Resources Board of the Ministry of Land and Natural Resources
Weather Centre, Manchester
Wigan C.B.
Wigan R.D.
Withnell U.D.

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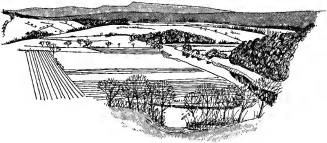

Ribble Valley, looking north towards Longridge, five miles east of the centre of Preston

OP. 1100. 82. 50

Ministry of Housing and Local Government

Central Lancashire

study for a city

Consultants' proposals for designation

OP
17 JUL
1967

London Her Majesty's Stationery Office 1967

Foreword

To the Rt. Hon. Anthony Greenwood, M.P., Minister of Housing and Local Government

In February 1965 when your predecessor in office, the Rt. Hon. Richard Crossman, M.P., announced the Government's intention to go ahead with plans for a new town development in the Leyland/Chorley area he laid stress on three related aims. These were his words—

> 'The Government have been considering as a matter of urgency how they can help Manchester to deal with its housing problems in a way that would contribute positively to the general prosperity and growth of the North-West . . . (They) have decided to designate a site in the Leyland Chorley area for a large new town . . .
>
> 'In addition to providing for the long-term overspill needs of Manchester, this new town—strategically well placed in relation to the road-rail network—should contribute to the industrial revival of the whole region, and form a new focus for urban renewal . . .
>
> 'The importance we attach to it is that we see it as a point for the industrial revival of the whole region, which I think will inspire the region to feel that the south does not get it all'.

When we were asked to develop this proposition in detail our first reaction was one of great satisfaction at the benefit this share of the nation's investment in town building would bring to the north. At the same time we were impressed by the bold and imaginative scale of the enterprise—a plan to add new homes and work for 150,000 people in 20 years to an already extensively urbanised area is a challenge of no mean order. To set out to find ways of doing it *well*—in such a way as to set new development norms for the region—is to embark on a formidable task.

Two things have sustained us in the work when the going has been difficult. One is the support of the two great local government authorities in our area of study—Lancashire County Council and the County Borough of Preston. The strategy underlying this development was not born overnight. It has emerged after many years of study, discussion and work by the officials and members concerned, and it is due largely to their imagination and foresight that the necessary substructure has been created which can form a sound basis for this splendid new development. Our role has been to build on ground already well prepared by officials who have given us without reservation the benefit of their work and experience, and who have continued to help us with an unselfish and tireless enthusiasm quite beyond what we had any right to expect.

Our second great support has been our client—your Ministry, whose officials have given us more than ordinary help. For this invaluable and dedicated contribution of central and local government to our team effort we are most grateful.

The terms of reference of our study asked us three chief questions—first, is growth of this pace and magnitude feasible in this part of the North-West? Secondly, if it is, what form should it take? Thirdly, what, in relation to this form, should be the size and shape of the area to be designated as that over which the Development Corporation will operate the powers given by the New Towns Act?

The answer to the first question is undoubtedly 'yes!' It was of course clear at the outset that this is a project of very different order from the established pattern of new town development in this country. The new growth will be based on a thriving and energetic group of communities with a population of about a quarter of a million already. It will be centred on a national communications route which was established 2,000 years ago for geographical reasons which still hold good (and is now being rapidly upgraded to 21st Century standards), and it will be in easy reach of, among other good things, four universities, an extensive seaboard with an international resort, the Lake District, wild Pennine moorlands of breathtaking beauty, and the rich and varied culture of two of the half dozen great metropolitan cities of the British Isles. The new city, given that it is built well, and above all quickly, will thus naturally attract people and industrial organisations of the highest calibre and will present them immediately with a wide range of social facilities and community life. The large number of growth points provided by this type of dispersed development will guarantee the necessary speed of construction at the same time as it will prevent the social heritage of the existing settlements from being overwhelmed by too rapid an influx of new people. Furthermore, the new investment and necessary restructuring of the towns already there will ensure that the outworn buildings, derelict land and sub-standard environment which they have inherited from the Industrial Revolution will be rapidly renewed to the immediate benefit of the population of the whole area.

As to size we are satisfied beyond doubt that there is more than enough of the right kind of land in the right sort of place to accommodate a city of the population that is contemplated—and that is a comforting thought for the future. There is little doubt that once massive growth gets under way in Central Lancashire it will be very difficult to hold it down to a prescribed population level.

But we were asked whether the order of size proposed was, in our opinion, too big or too small. Our studies have led us to confirm the original proposition as the one most likely to succeed, not only in its own right as a city of half a million people in the 1990's, but also as a generator of economic growth and rising prosperity first for the ring of towns around Preston and later spreading outwards to the region as a whole. A concentration of this size, given adequate internal communications of the sort we describe in the body of the report, can support city scale facilities of the kind for which people at present living in the area have to travel to Manchester or Liverpool. It can provide a wide choice of work, social opportunity and leisure activities and at the same time act as a source of new labour, work and homes for the surrounding sub-region. It will provide the opportunity to set new standards of environment which will exert a powerful influence on the struggle to improve radically the physical environment of the North-West. The potential is already there. There is no reason why, if it is properly exploited, the new city should not rival in convenience and beauty some of our more attractive cities of the past and serve as an effective magnet to relieve population pressure along the Manchester-Liverpool axis.

All these considerations have been strongly in our minds as we have bent them to answering your second and third questions and worked towards a closer definition of the possible form of the new city, and following from this a suggested boundary for designation. We have been strongly influenced by the need to keep new development south of the Ribble down to a level which will avoid the risk of later coalescence southwards with Wigan and the belt of country between Liverpool and Manchester. We have all the same suggested a large increase in population in this area between Preston, Leyland and Chorley to provide an adequate base for extensive industrial expansion, for which there is a good variety of excellent sites, and to support the necessary degree of urban renewal and recovery of derelict land. The balance of new population is located north of the Ribble in a linear continuation of the Chorley-Leyland-Preston arc, curving towards the north east.

This linear form offers the best opportunities for the provision of an economic movement pattern which will balance a high degree of personal mobility with a viable public transport system, and thus knit together this group of new and expanded townships into a socially and economically cohesive whole. The easterly inflection north of the Ribble is the result of a rational balance of many influences among which we have given considerable weight to the need to keep well clear of the uniquely precious farmland of the Fylde, and to the aesthetic opportunities for close integration of the new architecture with the outlying fells of the Forest of Bowland to the north, and the noble landscape of the Ribble Valley to the south. Somewhere near the centre of the arc will lie the new Preston ready to take its place as the sub-regional centre—the first among equals in the chain of townships—not so powerful as to impoverish the centres of the rest, nor so weak as to create damaging ambiguities in the provision of city scale services. Some of these will naturally be concentrated in Preston, but not, we suggest, by any means all. Every one of the township centres will have its share of these civic privileges so that it can be at once a good and lively place in its own right, and at the same time contribute to the richness and variety of the city as a whole. We believe that the form of development we suggest will provide extensive opportunities for linkage between the new city and the towns of the Calder Valley which will make it possible for them to get substantial and quick benefit from this new centre of growth. These settlements, and others within the sub-regional sphere of influence, must be ready to adapt themselves to the changed and expanded roles which they will be called upon to play in the new settlement structure which will follow from the building of the new city. We believe it is important that in its design and in the provision of new patterns of communication with the sub-region, the new city should help them without threatening their independence, rather than turn its back on them.

No other country has demonstrated such ability to build new towns quickly and efficiently as we have, nor has anyone used them so effectively as images of the future—demonstrations of improved economic, social and environmental standards which can serve as a model and an inspiration for the whole nation. We have felt deeply the responsibility to build on this tradition and extract as fully as possible the experience of the past, in order to try and do better in the changed context and new opportunities of this project. In particular we have been concerned to produce a pattern of development capable of quick and vigorous execution, and able at the same time to provide for every newcomer, *as soon as he or she arrives*, not just a house in a muddy field, but a balanced provision of *all* the necessities of life combined in rapidly established communities.

There will rightly be a great deal of discussion and argument arising from a proposition of such size and boldness as this, now that it has reached the crunch point of a line on the map and the immediate prospect of designation. We have tried to produce a document which will illuminate the democratic process and provide a helpful background for your ultimate decision. Although much of it is necessarily factual, we hope that something comes through of the challenge and the excitement which we have felt during the past year's work, and that the great idea which we were asked to study will become an energetically pursued reality of the kind which made the North West one of the great sources of civilisation in the nineteenth century.

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January, 1967

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part 1

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Lostock Hall-Tardy Gate Area, between Preston and Leyland